



8 February 2010

Mr. Rick Lanham
Project Manager
Federal Site Remediation Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

**Subject: Completion Report for Gas Vent and Gas Well Remedial Construction
MIG/DeWane Landfill Site, Belvidere, Illinois**

Dear Mr. Lanham:

On behalf of BFI Waste Systems North America (BFINA), this letter presents two copies of the "Completion Report for Remedial Construction". The document provides the details of the construction completed as described in the "Gas Well and Vent Construction Remedial Action Work Plan" (Geosyntec, 2008).

Should you have any questions please contact me at (312) 416-3919.

Sincerely,

John Seymour, P.E.
Associate

Copies to: Eric Ballenger; BFINA (1 copy)
John Grabs; CDM (1 copy)
Howard Caine; USEPA (1 copy)

Enclosure

Prepared for

BFI Waste Systems North America (BFINA)

Hanover Park, Illinois 60133

Completion Report for Remedial Construction

MIG/DeWane Landfill Superfund Site

Boone County, Belvidere, Illinois

Prepared by

Geosyntec 
consultants

engineers | scientists | innovators

134 North La Salle Street, Suite 300

Chicago, Illinois 60602

Project Number CHE8214

January 28, 2010

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1. INTRODUCTION

1.1 Terms of Reference

This report was prepared by Geosyntec Consultants (Geosyntec) for BFI Waste Systems North America, LLC (BFINA) to document construction activities associated with the installation of landfill gas vents (“vents”) and dual-phase leachate/gas wells (“wells”).

This report was written by Kristi Kern, E.I.T. and reviewed by Burak Tanyu, Ph.D. and John Seymour, P.E., in accordance with Geosyntec’s internal quality review process and the Remedial Action Work Plan (RAWP – Geosyntec, 2008).

1.2 Purpose

The purpose of this report is to document the construction activities performed to complete the installation of gas vents and dual phase wells at the MIG/DeWane Landfill Superfund Site.

1.3 Site Location and Description

The site, also known as Boone Landfill, MIG Investment, DeWane Landfill, Bonus Landfill, or Kennedy Landfill, is located in Boone County, Illinois approximately 0.25 miles east of the City of Belvidere and 0.5 miles north of U.S Business Route 20 (Figure 1). The Site is located primarily in the south half of the southeastern quarter of Section 30, Township 44 North, Range 4 East.

The Site is bounded on the north by the Union Pacific (formerly the Chicago and Northwestern) railroad tracks and a Commonwealth Edison right-of-way. North of the railroad tracks is an agricultural field that extends to the Kishwaukee River. Agricultural properties are located to the east and south of the Site and a commercial property is located south of the site. A soil borrow pit, used to provide soil for the Site’s interim cap, is immediately adjacent to the west of the Site. Farther west of the Site is a residential housing development known as the Wycliffe Estates subdivision.

The Site occupies an area of approximately 47 acres and rises to a height of approximately 55 ft above the surrounding terrain. The Site consists of a landfill and leachate surface impoundment (Figure 2). The surface impoundment is located in the eastern portion of the site and was constructed to receive leachate from the eastern area of landfill operations through a gravity flow leachate collection system.

1.4 Project Contractors and Personnel

The personnel involved in the well/vent installation and their project responsibility are as follows:

Landfill Responsible Party – BFI Waste Systems of North America, LLC (BFINA): Eric Ballenger

Contractor – Terra Engineering and Construction (TE&C): John Karsten (Project Manager), Mark Rippe (Health and Safety Coordinator), Steve Smith (Foreman), Paul Krantz (Foreman)

TE&C Subcontractor - Dunn-Rite Landscaping: Kevin Winger (Co-Owner), Mike Busch (Co-Owner)

Level B Subcontractor for TE&C – JESMC: Jim Meldrum

Geosyntec Consultants – John Seymour (Project Manager), Burak Tanyu (Project Engineer), and Kristi Kern (Construction Quality Assurance Site Manager)

Illinois Environmental Protection Agency (IEPA) Representative – Camp Dresser & McKee, Inc. (CDM): Lisa Harrison (Project Manager), Helen Haase (On-site Supervisor), Bryant Lewis (Substitute On-site Supervisor), Rebecca Hong (On-site Supervisor)

Illinois Environmental Protection Agency (IEPA) – Rick Lanham (Project Manager)

2. PROJECT BACKGROUND

The Site operated as a landfill from 1969 until 1988. The Site received residential, municipal, commercial, and industrial wastes and is classified, based on United States Environmental Protection Agency (U.S. EPA) guidance, as a Type I landfill. A Type I landfill is a co-disposal facility where hazardous wastes are disposed of with municipal solid wastes.

U.S. EPA placed the Site on the National Priorities List (NPL) in 1990. Additional historical information from 1990 through mid-2006 is included in the “Remedial Design Work Plan” (RDWP- Geosyntec, 2006).

A predesign investigation identified methane gas in several wells around the landfill perimeter. The presence of methane was addressed in the “Preliminary Remedial Design Report” (Geosyntec, 2007) by including the installation of additional gas vents around the side slopes of the landfill, and a combined passive gas venting trench and passive leachate drainage trench around portions of the perimeter of the landfill.

In a 13 June 2008 letter to Illinois EPA, BFINA proposed to install the gas wells and vents in 2008 and outlined a plan for their installation. The Illinois EPA provided comments on the plan on 26 June 2008 and BFINA responded on 16 July 2008. The plan was approved in a letter dated 3 November 2008 and construction was allowed to commence (Appendix A).

The goal of this project was to create additional gas venting over the existing soil cover to contain and remediate gasses generated from the site. The intent of constructing the wells and vents in 2008 is to (i) expedite venting of landfill gas to mitigate the presence of methane in GP-27, GP-28 and GP-30; and (ii) shorten the construction schedule for remedial action construction work expected to occur in 2009 by completing some of the work in 2008.

The overall scope of work for this project consisted of drilling boreholes at fifty eight (58) different locations around the landfill and to construct passive gas vents and dual phase wells.

3. CONSTRUCTION ACTIVITIES

3.1 General

The construction work that was performed includes the following:

- installation of 17 dual-phase (DP) wells;
- installation of 41 gas vents (GV);
- management of investigation derived waste (IDW);
- installation of erosion and sedimentation controls; and
- stabilization of disturbed areas.

3.2 Excavation of Investigation Derived Waste (IDW) Trench

In preparation for consolidation of the IDW below the existing cover, a trench was excavated through the existing topsoil and 2-ft thick IRM cover and into the IRM clay soil backfill. The backfill had been placed on top of the landfill to fill in the depressions that existed before 1992. The topsoil was segregated and stockpiled for later reuse. The subsequent several feet of clay was also segregated and stockpiled for later use to reconstruct the IRM cover upon completion of the work.

The IDW trench was excavated to a depth of approximately nine feet. The IDW trench was approximately 8-ft wide and 120-ft long. The location of the trench is shown on Figure 3.

3.3 Construction of Gas Vents and Dual Phase Wells

Preparation for Drilling: The vents/wells were constructed on slopes ranging from nearly horizontal (approximately 3%) slopes to 4 horizontal (H): 1 vertical (V). Consequently, some drilling locations needed to be leveled by the Contractor using clay from the stockpile to provide a stable subgrade for drilling. After drilling, the leveling pad/work area was removed and the surrounding area was graded to match pre-drilling grades.

An IDW stockpile location was prepared adjacent to the borehole location by scraping the topsoil and some clay and using the scraped material as a berm to contain any leachate from the IDW. An exclusion zone was set up around the borehole, IDW stockpile and drill rig to keep persons not in Level B protection away from potential exposure from the waste. Caution tape affixed to steel stakes were used to construct the exclusion zone. The exclusion zone was approximately 50-ft by 50-ft. Personnel working inside the exclusion zone were required to be in Level B protection and perform air monitoring. The track loader operator was allowed to briefly enter the exclusion zone to remove IDW only when air monitoring results indicated there

were no volatile organic compounds (VOCs) above the Health and Safety Plan (HASP) action levels. After completion of the borehole, personnel were allowed to downgrade to modified Level D protection only after air monitoring results indicated there were no VOCs present above the Health and Safety Plan action levels. The IDW stockpile location was then covered with clay and topsoil and graded to match adjacent ground.

Boreholes: The vents and wells were installed through the existing cover, the unsaturated and saturated waste. Boreholes were advanced to the depths indicated in Table 1. Seventeen (17) wells and forty one (41) vents were installed and construction details (including the cover soil thickness) were recorded on the well construction completion forms (well log) presented in Appendix B. The boreholes were drilled using a bucket auger that was 36-inches in diameter. During design it was estimated that the cover thickness was approximately 3-ft at gas vent locations based on available data. However, once construction progressed, it was determined that in some locations the thickness of the cover system was more than estimated. Therefore, in some locations the boring depths were adjusted according to the thickness of the clay cover. Where the clay cover was greater than 3-ft at gas vent locations, additional drilling was completed to keep the same length of perforations in contact with the unsaturated waste. The as-built boring depth and design depth of each borehole as well as any requested additional drilled depths are summarized in Table 1. The as-built borehole depths were equal to or greater than design depths in all locations, except at two locations that were instructed to be stopped above design depth because bottom clay liner was encountered before reaching the design bottom of the borehole. The details of the borehole drilling activities are presented in the Daily Reports in Appendix D.

The borehole spacing was designed so that the radius of influence (ROI) of each well or vent overlapped with an adjacent well's ROI. The ROI is dependant on the maximum allowable gas pressure at the slope of each well. As landfill gas pressure builds up against the geomembrane in the cover system, the stability of the slope decreases. Steeper slopes can withstand less pressure than shallow slopes, and as a result, the ROI of steep slopes is less than that of shallow slopes. The ROI is also dependant on the effective perforation length of the pipe within the waste.

Well/Vent Casings: The casings for the DP wells were installed to be operated as passive gas vents. However, the DP well casings were designed to be able to be modified at a later date to include the mechanical equipment necessary to extract both leachate and gas, if necessary, based upon post-closure (after construction of the new cover system) monitoring results. To allow for sufficient space for the mechanical equipment, the casing was selected to be 8-inch diameter. The GV casings were selected to be 6-inch diameter to be durable.

The DP well and GV casings were perforated to allow collection of gas for a specified length of casing. The perforations have 3/8-inch wide vertical slots approximately 8-inches long. The as-

built length of solid and perforated pipe as well as the design length of solid and perforated pipe are summarized in Table 1.

The DP well and GV casings were schedule 80 polyvinyl chloride (PVC). PVC has been found to be effective for solid waste landfill gas extraction operations. The stick up of the DP wells and GVs was high enough to avoid a person from directly breathing the vapors. The height of stickup above the existing ground surface was designed to be approximately 7.5 ft (6.0 ft after final cover) and as-built stick up heights are summarized in the well logs located in Appendix B. All of the DP well and GV casings were also fitted with an aluminum "turbine vent" tops and sample ports to allow for periodic landfill gas testing.

Aggregate Filter Pack: Aggregate filter pack was constructed to keep waste particles from entering the DP wells and GVs. The aggregate filter pack also serves as an additional zone to collect gas from the waste. The selected aggregate was described as a "5-inch minus re-screened" from Clear Lake Sand and Gravel, Belvidere, Illinois. The grain size distribution indicated that the aggregate contained 93% gravel, 5.2% sand and 1.8% fines (Appendix C).

Annular Space Seal: The seal of the annular space around the DP well and GV casings above the aggregate filter pack was made of a bentonite product, Hole Plug[™], manufactured by Baroid. The seals on the GVs were approximately 3-ft thick and were 5-ft thick on the DP wells. Additionally, a geocomposite "donut" was placed over the aggregate to reduce the migration of bentonite into the aggregate filter pack.

The annular space seal was constructed to create a seal over the gas collection. The GVs were designed to have a 3-ft seal sufficient to keep surface air from leaking into the waste. The DP wells were designed to have a 5-ft seal sufficient enough to keep surface air from being drawn through the seal and into the waste should the DP wells operate in the active gas extraction mode. Therefore, because the GV annular space seal is smaller than the DP seal, the gas vents are not to be converted to a dual phase system in the future.

Temporary concrete barriers: Temporary concrete barriers were placed around the vents and wells as required. The temporary concrete barriers consisted of 3-ft diameter, 4-ft long concrete pipes placed around the casing stick up. Prior to placement of the pipes, stone was placed on the ground to provide a suitable foundation for the concrete pipe barrier.

3.4 Management of IDW

The accumulated waste from drilling was placed into the IDW trench at the end of each working day and covered with approximately 1-ft thick daily cover clay soil, taken from the clay stockpile created from the excavation of the IDW trench. The waste was placed in the trench to approximately 4-ft below ground surface (bgs) to accommodate subsequent placement of the cover system.

When the trench approached capacity, the top of the waste was covered with a 1-ft thick “bridge” lift over the waste to create a working platform to construct the overlying cover. The cover system consisted of 2.5-ft of clay and 0.5-ft of topsoil. The clay cover was then placed over this “bridge” layer in three 10-inch lifts and was compacted using a padfoot compactor. The in-place density and moisture content of each lift of the clay cover was determined using a nuclear density gauge and the results met the design requirements. The test results are located in Appendix C.

3.5 Installation of Erosion and Sediment Controls

Silt fence was installed down gradient of disturbed areas throughout the site as shown in Figure 3. A diversion berm was created at the toe of the disturbed slope near the entrance to divert any sediment-laden stormwater through the silt fence. Additionally, any ruts and uneven ground were graded level. “Green Yard 13-13-13” Fertilizer, IDOT Class 2 seed mix and mulch were placed on disturbed areas. Two different types of mulch were applied. The first was a blown straw and the second was a hydromulch which consisted of a wood fiber, seed and water. All disturbed areas received at least one type of mulch as well as seed and fertilizer. Some erosion and sediment controls were implemented in December 2008 and the remainder in early May 2009. The delay in implementing the remainder of the erosion and sediment controls was due to cold weather.

3.6 Additional Work

Additional work was added onto the original scope of work as the project progressed. The Illinois EPA visited the site on November 11, 2008 and observed some tracking of sediment onto the entrance road to the site. The IEPA requested the entrance road and parking lot/lay down area be upgraded. A 6-inch to 12-inch thick aggregate fill (“3/4-inch with fines road gravel”) layer was placed over the existing road and parking lot/lay down area.

The upgrade to the road and parking lot/laydown area was performed on November 17, 2008. An aggregate fill consisting of ¾ inch material with fines was used to upgrade the existing road and parking lot/staging area. A 6-inch diameter corrugated metal pipe culvert was placed under the upgraded road to allow for storm water to flow freely below the perimeter access road (see Photolog 11-17 in Appendix E). Approximately 6-inch to 12-inch thick layer of aggregate fill material was placed on the existing road and ground and compacted with a roller compactor (see photo 2 in Photolog 11-18 in Appendix E).

Excessive settlement occurred at RC-1 and RC-2 and repairs were made on March 12, 2009 (see photos 4 through 7 in Photolog 3-12 in Appendix E).

Leachate was pumped out from the Northern knockout pot on May 5th, 2009 (see photo 1 in Photolog 5-5 in Appendix E).

4. TESTING AND MONITORING

4.1 Daily Reports and Photo Logs

Daily Reports and Photo Logs were completed by Geosyntec to document the daily activities for the 28 days on-site. These reports and logs have been sent electronically to the project team during construction and are also provided in Appendix D and Appendix E, respectively.

4.2 Leachate Level Readings

A water level meter was used to obtain the leachate level in the installed vents/wells. At least two days were allowed to elapse before the leachate level was measured to allow for the leachate in the newly installed vent/well to reach equilibrium conditions. The results of the readings are summarized in Table 2.

The leachate level readings were used to evaluate the effective length of perforations for gas collection. The effective length of perforations in a majority of the DP well and GV locations are larger than the design length of perforations, as shown on Table 2. This results in larger radius of influence (more effective) for gas collection than calculated during the design. These data will be used during the design of future components of the remedial action.

4.3 Gas Concentration Readings

A Landtec GEM-500 gas meter was used to take gas readings at the gas sample ports on the vents and wells. The gas concentration results are summarized in Table 3. The results indicate that the passive gas vents are working properly and methane gas is being discharged from the landfill.

4.4 Soil Testing

Soil testing was performed on the clay soil that was excavated from the IDW trench. The clay was tested for its suitability to be used as a cover soil for the IDW trench area. Grab samples were collected from the stockpile and one was sent to CGC, Inc. for Standard Proctor (ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort) and hydraulic conductivity laboratory testing and the other was sent to Testing Service Corporation for soil classification, mechanical sieve, hydrometer and Atterberg limits laboratory testing. The index property tests indicated that the soil is classified as a lean clay (CL) with 51 % fines, liquid limit of 23, and plasticity index of 10. The standard Proctor test results indicated that the maximum dry density of the soil is 125 pcf and the optimum moisture content is 12%. These results were used to recompact the soil sample to optimum moisture

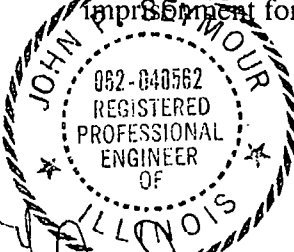
content and 95% dry density. The sample was tested for hydraulic conductivity and the results showed that the hydraulic conductivity of the soil was 1.7×10^{-8} cm/s, which met the design criterion of a maximum of 1×10^{-7} cm/s. The following tests were performed on a sample of clay soil from the IDW trench excavation.

In-place density and water content of the clay cover was measured for quality control during compaction of the 2.5 ft thick clay cover. Measurements were performed at one location per lift in accordance with ASTM D6938 (Standard Test Method for In-Place Density and Water Content of Soil by Nuclear Methods). The clay cover was required to be compacted to 95% dry density and to 0 to +3% of optimum moisture content. The in-place density and water content results are provided in Appendix C and all results meet the requirements.

5. SUMMARY AND CONCLUSIONS

The gas vent/dual phase well installation project was completed from 11 November 2008 to 13 December 2008 and from 27 April 2009 to 5 May 2009. During construction, Geosyntec on-site personnel observed construction and performed construction quality assurance activities. Geosyntec personnel checked that minimum requirements as defined in the Construction Drawings and Specifications for the RAWP were met and also checked that conditions or material identified as not conforming to the Project Documents were replaced, repaired, or reworked, as appropriate, to meet design requirements. The results of Geosyntec's oversight activities indicate that the well/vent installation project was constructed in accordance with Design Drawings.

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



John Seymour
John Seymour, P.E.

TABLES

Table 1. Summary of Design and As-Built Data

Well/Vent ID	As-Built Solid Pipe Length (ft)	Design Solid Pipe Length (ft)	As-Built Perforated Pipe Length (ft)	Design Perforated Pipe Length (ft)	Drilled Depth (ft)	Design Depth (ft)	Additional Drilling (ft)
DP-01	14.50	14.50	27.00	27.00	36.00	35.00	1.00
DP-02	14.50	14.50	30.10	30.10	38.10	38.10	0.00
DP-03	14.50	14.50	28.50	28.50	26.50	36.50	-10.00
DP-04	14.50	14.50	23.50	23.50	33.00	31.50	1.50
DP-05	14.50	14.50	38.50	38.50	47.00	46.50	0.50
DP-06	14.50	14.50	28.50	28.80	38.00	36.80	1.20
DP-07	14.50	14.50	35.50	35.50	45.00	43.50	1.50
DP-08	13.50	14.50	38.00	38.00	47.00	46.00	1.00
DP-09	14.50	14.50	43.00	42.50	51.00	50.50	0.50
DP-10	14.50	14.50	36.50	36.50	45.00	44.50	0.50
DP-11	15.50	14.50	39.50	39.50	48.00	47.50	0.50
DP-12	14.50	14.50	35.00	37.00	43.00	45.00	-2.00
DP-13	14.50	14.50	41.50	41.50	52.00	49.50	2.50
DP-14	14.50	14.50	36.50	34.50	43.00	42.50	0.50
DP-15	14.50	14.50	39.00	39.00	48.00	47.00	1.00
DP-16	14.00	14.50	25.50	25.50	35.00	33.50	1.50
DP-17	14.50	14.50	28.50	28.50	37.00	36.50	0.50
GV-01	11.50	11.50	9.00	9.00	14.00	14.00	0.00
GV-02	11.50	11.50	8.00	8.00	13.00	13.00	0.00
GV-03	11.50	11.50	8.00	8.00	14.00	13.00	1.00
GV-04	11.50	11.50	8.00	8.00	13.00	13.00	0.00
GV-05	11.50	11.50	7.00	7.00	12.00	12.00	0.00
GV-06	11.50	11.50	10.50	10.50	15.50	15.50	0.00
GV-07	11.50	11.50	11.00	11.00	16.00	16.00	0.00
GV-08	11.50	11.50	10.50	10.50	15.50	15.50	0.00
GV-09	11.50	11.50	15.50	15.50	23.00	20.50	2.50
GV-10	11.50	11.50	15.50	15.50	23.00	20.50	2.50
GV-11	16.50	11.50	22.00	22.00	32.00	27.00	5.00
GV-12	11.50	11.50	14.00	14.00	21.00	19.00	2.00
GV-13	11.50	11.50	13.00	13.00	19.00	18.00	1.00
GV-14	12.50	11.50	13.00	13.00	18.60	18.00	0.60
GV-15	11.50	11.50	8.00	8.00	13.00	13.00	0.00
GV-16	12.50	11.50	13.00	13.00	19.00	18.00	1.00
GV-17	12.50	11.50	6.50	7.00	12.00	12.00	0.00
GV-18	11.50	11.50	10.50	10.50	15.50	15.50	0.00
GV-19	11.50	11.50	8.00	8.00	14.00	13.00	1.00
GV-20	11.50	11.50	13.00	13.00	19.00	18.00	1.00
GV-21	12.50	11.50	11.00	11.50	17.00	16.50	0.50
GV-22	12.50	11.50	10.50	10.50	16.00	15.50	0.50
GV-23	12.50	11.50	10.50	10.50	16.00	15.50	0.50
GV-24	11.50	11.50	10.50	10.50	17.00	15.50	1.50
GV-25	12.50	11.50	8.00	8.00	13.00	13.00	0.00
GV-26	12.50	11.50	9.50	9.50	15.00	14.50	0.50
GV-27	11.50	11.50	8.00	12.00	13.00	17.00	-4.00
GV-28	11.50	11.50	4.00	4.00	9.00	9.00	0.00
GV-29	11.50	11.50	9.00	9.00	15.00	14.00	1.00
GV-30	15.50	11.50	15.50	15.50	25.00	20.50	4.50
GV-31	16.00	11.50	15.50	13.00	25.00	18.00	7.00
GV-32	11.50	11.50	12.00	12.00	17.50	17.00	0.50
GV-33	17.50	11.50	15.00	15.00	27.00	20.00	7.00
GV-34	22.50	11.50	21.00	21.00	37.00	26.00	11.00
GV-35	14.50	11.50	14.50	14.50	23.00	19.50	3.50
GV-36	15.00	11.50	13.00	13.00	21.50	18.00	3.50
GV-37	11.50	11.50	15.50	15.50	21.00	20.50	0.50
GV-38	12.50	11.50	10.00	10.00	15.00	15.00	0.00
GV-39	11.50	11.50	8.50	8.50	13.50	13.50	0.00
GV-40	12.50	11.50	8.50	8.50	13.50	13.50	0.00
GV-41	11.50	11.50	8.00	8.50	13.50	13.50	0.00

Table 2. Screen Data & Leachate Level Readings

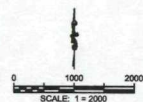
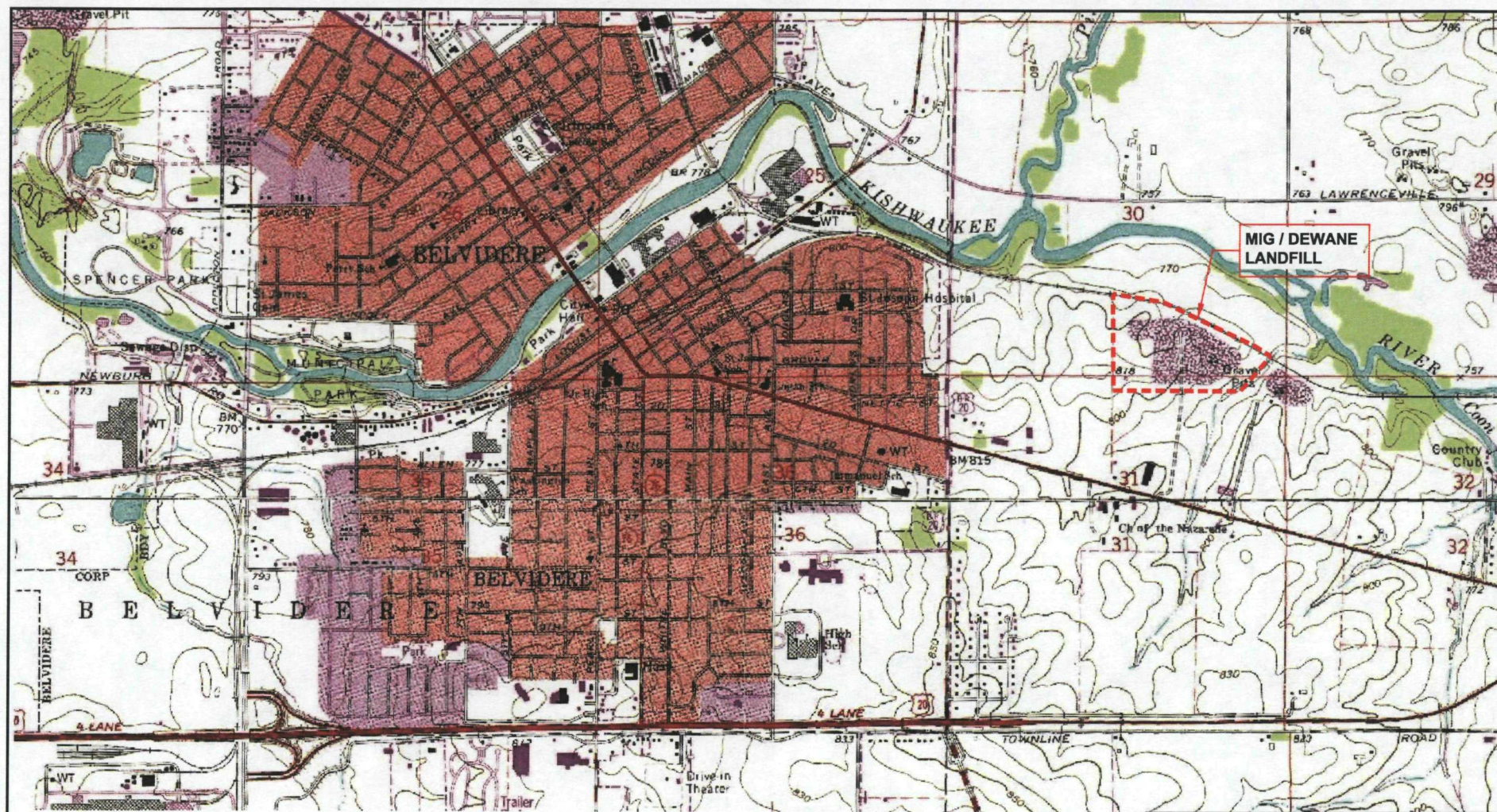
Well/Vent ID	Top of Perforations el. (ft)	Ground Surface el. (ft)	Bottom of Clay Cover el. (ft)	Bottom of Perforations el. (ft)	Leachate Elevation (ft)	Effective Length of Perforations for Gas Collection (ft)	Design Length of Perforations for Gas Collection (ft)
DP-01	827.60	834.60	827.60	800.90	802.10	25.50	9.00
DP-02	826.60	833.60	829.60	796.80	798.70	27.90	10.50
DP-03	827.10	834.10	829.10	798.90	N/A	28.20	9.00
DP-04	821.30	828.30	824.80	798.10	800.00	21.30	8.00
DP-05	831.40	838.40	827.40	793.10	802.10	25.30	14.00
DP-06	828.30	835.30	823.30	799.80	821.00	2.30	16.50
DP-07	832.70	839.70	824.70	797.50	798.20	26.50	15.00
DP-08	833.10	840.10	830.10	795.40	803.50	26.60	19.00
DP-09	834.70	841.70	831.70	792.00	792.80	38.90	19.00
DP-10	831.30	838.30	828.30	795.10	798.80	29.50	17.00
DP-11	829.20	837.20	826.70	790.00	790.70	36.00	12.00
DP-12	829.10	836.10	827.10	794.40	800.70	26.40	13.00
DP-13	832.30	839.30	828.30	791.10	794.30	34.00	15.50
DP-14	823.50	830.50	821.50	789.30	N/A	32.20	11.00
DP-15	829.20	836.20	825.70	790.50	794.50	31.20	10.50
DP-16	815.50	822.50	819.00	790.30	799.30	16.20	5.00
DP-17	820.20	827.20	824.20	792.00	N/A	28.20	7.00
GV-01	808.60	812.60	809.60	799.90	800.40	8.20	7.00
GV-02	814.70	818.70	815.70	807.00	N/A	7.70	6.00
GV-03	812.45	816.45	813.45	804.75	805.95	6.50	6.00
GV-04	867.40	871.40	869.40	859.50	N/A	7.90	6.00
GV-05	817.50	821.50	818.50	810.80	811.20	6.30	5.00
GV-06	814.40	818.40	815.90	804.20	808.40	6.00	8.50
GV-07	808.15	812.15	809.65	797.45	800.65	7.50	9.00
GV-08	801.14	805.14	801.64	790.94	791.24	9.90	8.50
GV-09	820.60	824.60	815.60	805.40	808.20	7.40	13.50
GV-10	821.50	825.50	814.50	806.30	807.20	7.30	13.50
GV-11	825.30	834.30	826.30	803.60	804.80	20.50	20.00
GV-12	822.30	826.30	823.30	805.60	N/A	16.70	12.00
GV-13	815.50	819.50	817.50	802.80	N/A	12.70	11.00
GV-14	806.80	811.80	809.30	794.10	795.30	11.50	11.00
GV-15	789.90	793.90	791.40	782.20	782.70	7.20	6.00
GV-16	799.40	804.40	801.40	786.70	788.40	11.00	11.00
GV-17	789.40	794.40	791.90	783.20	786.10	3.30	5.00
GV-18	807.50	811.50	808.50	797.30	797.50	10.00	8.50
GV-19	805.50	809.50	806.00	797.80	N/A	7.70	6.00
GV-20	813.80	817.80	814.80	801.10	802.40	11.40	11.00
GV-21	819.60	824.60	821.60	808.40	808.60	11.00	9.50
GV-22	812.30	817.30	815.30	802.10	803.60	8.70	8.50
GV-23	815.30	820.30	818.30	805.10	807.00	8.30	8.50
GV-24	812.80	816.80	814.30	802.60	803.10	9.70	8.50
GV-25	806.60	811.60	808.60	798.90	801.10	5.50	6.00
GV-26	809.41	814.41	811.41	800.21	802.61	6.80	7.50
GV-27	800.76	804.76	801.26	793.06	799.36	1.40	10.00
GV-28	814.40	818.40	815.40	810.70	N/A	3.70	2.00
GV-29	813.10	817.10	814.60	804.40	N/A	8.70	7.00
GV-30	828.80	836.80	829.80	813.60	822.80	6.00	13.50
GV-31	820.70	829.20	819.20	805.50	810.70	8.50	11.00
GV-32	828.00	832.00	821.50	816.30	817.70	3.80	10.00
GV-33	824.50	834.50	825.50	809.80	810.60	13.90	13.00
GV-34	827.20	842.20	828.20	806.50	807.40	19.80	19.00
GV-35	826.60	833.60	827.60	812.40	813.70	12.90	12.50
GV-36	823.80	831.30	824.80	811.10	812.00	11.80	11.00
GV-37	821.60	825.60	814.10	806.40	811.30	2.80	13.50
GV-38	812.38	817.38	815.38	802.68	803.88	8.50	8.00
GV-39	807.30	811.30	808.80	799.10	802.40	4.90	6.50
GV-40	800.05	805.05	801.55	791.85	792.05	8.00	6.50
GV-41	796.33	800.33	796.33	788.63	791.33	5.00	6.50

Table 3. Summary of Gas Concentration Readings

Well/Vent ID	12/16/2008			1/29/2009		
	Gas Concentration (%)					
	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
DP-1	31.0	31.0	12.8	11.2	6.7	16.7
DP-2	40.3	38.5	9.0	17.5	10.0	15.0
DP-3	51.4	35.8	12.3	0.0	0.2	20.2
DP-4	30.0	31.6	14.1	15.6	9.6	15.5
DP-5	54.7	37.6	7.2	31.1	17.5	10.2
DP-6	24.3	23.6	13.8	7.9	5.0	18.2
DP-7	43.5	39.6	12.4	30.8	17.1	11.8
DP-8	22.7	21.1	14.4	23.3	13.8	13.5
DP-9	47.8	37.8	14.2	31.3	17.5	11.3
DP-10	28.2	24.0	14.8	12.8	7.4	16.2
DP-11	0.0	0.1	20.5	29.2	15.2	12.1
DP-12	36.7	37.6	10.1	36.2	21.9	9.7
DP-13	0.0	0.2	19.4	20.6	10.5	15.0
DP-14	43.1	39.5	5.9	38.6	20.1	9.1
DP-15	28.9	24.1	12.8	17.1	8.0	15.5
DP-16	24.8	28.0	12.7	23.5	15.3	10.1
DP-17	38.1	37.0	11.8	56.7	32.1	5.2
GV-1	30.6	36.2	11.0	15.7	9.4	16.0
GV-2	15.8	19.4	12.4	51.0	29.6	8.1
GV-3	30.0	37.0	1.8	2.6	2.0	20.2
GV-4	39.0	43.6	8.0	49.6	32.0	7.0
GV-5	21.2	23.6	14.9	22.2	14.8	14.2
GV-6	21.7	21.1	12.7	20.5	13.5	12.9
GV-7	18.7	17.9	15.2	16.6	10.2	13.2
GV-8	49.1	44.2	6.7	56.2	32.4	3.4
GV-9	6.7	4.3	18.7	24.1	10.9	14.4
GV-10	21.1	19.2	16.9	21.1	11.5	12.7
GV-11	25.1	22.2	14.0	47.6	26.3	5.2
GV-12	0.0	0.2	19.9	49.4	27.7	6.1
GV-13	25.8	25.0	13.7	17.7	10.8	14.1
GV-14	0.0	0.2	20.9	0.2	0.1	21.1
GV-15	38.2	35.2	9.4	42.4	27.7	7.0
GV-16	30.4	24.9	11.0	51.1	28.0	8.1
GV-17	39.5	39.0	11.1	27.7	15.3	12.5
GV-18	9.3	7.1	18.8	19.4	10.2	15.4
GV-19	37.2	35.2	13.0	Sample Port Broken		
GV-20	54.3	34.8	10.0	28.1	16.1	10.5
GV-21	48.5	46.5	4.9	50.1	29.3	2.0
GV-22	10.5	10.9	17.1	32.8	23.0	3.5
GV-23	30.4	30.8	15.0	34.9	21.0	8.2
GV-24	11.7	12.6	17.4	39.2	25.8	5.4
GV-25	38.8	54.1	6.1	32.6	23.6	8.7
GV-26	34.5	42.9	9.4	53.0	33.0	3.3
GV-27	5.9	5.1	18.1	4.8	3.0	17.2
GV-28	21.4	24.1	12.2	37.7	24.5	11.1
GV-29	38.0	41.2	7.7	47.3	27.4	2.6
GV-30	19.4	21.8	16.3	0.0	0.1	20.3
GV-31	4.5	3.3	20.1	8.0	4.4	18.3
GV-32	9.4	6.6	18.8	0.8	1.0	20.0
GV-33	10.6	8.9	18.2	0.1	0.1	20.8
GV-34	19.5	20.7	17.1	12.6	8.3	16.4
GV-35	26.4	22.0	15.6	32.6	15.3	10.2
GV-36	44.1	45.0	8.4	24.7	12.0	14.5
GV-37	1.4	1.4	20.0	0.0	0.2	20.7
GV-38	18.7	21.6	13.1	26.0	17.2	12.7
GV-39	28.3	28.7	14.1	42.9	26.8	7.8
GV-40	41.7	47.4	7.8	58.8	34.1	6.7
GV-41	23.3	27.0	12.3	22.1	13.9	10.9

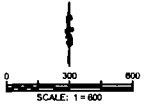
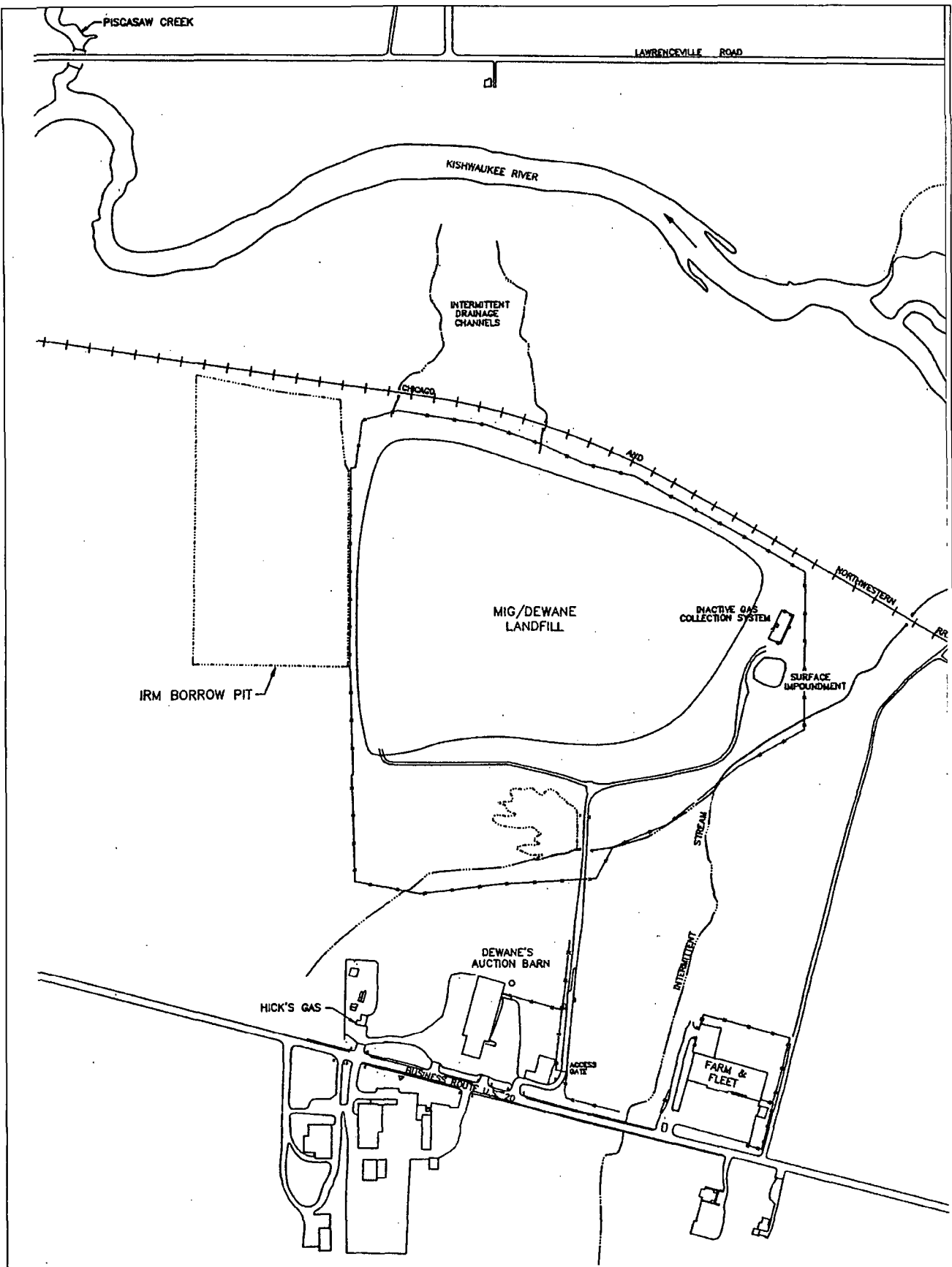
Note: Shading indicates gas sample port appears to be plugged

FIGURES



BASE MAP SOURCE: USGS 7.5 MINUTE QUADRANGLE MAPS BELVIDERE NORTH AND BELVIDERE SOUTH

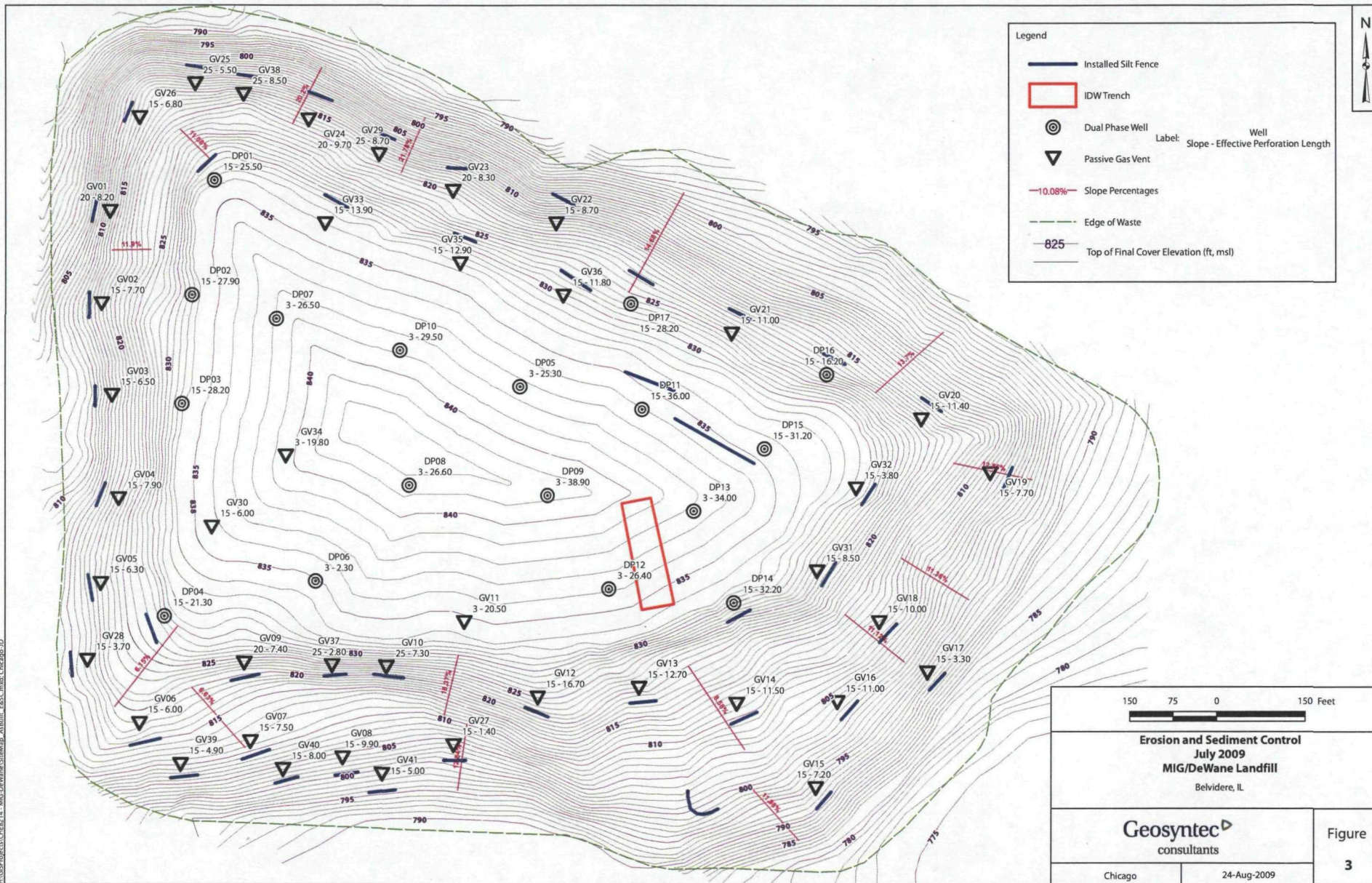
Geosyntec [®]	
consultants	
CHICAGO, ILLINOIS	
CLIENT:	BFI WASTE SYSTEMS OF NORTH AMERICA, LLC
PROJECT:	MIG/DEWANE LANDFILL BELVIDERE, ILLINOIS
TITLE:	SITE LOCATION
DRAWN BY:	ROO
CHECK BY:	JPS
PROJECT:	CHE214
FILENAME:	8214-039
DATE:	21 DECEMBER 2008
FIGURE NUMBER:	1

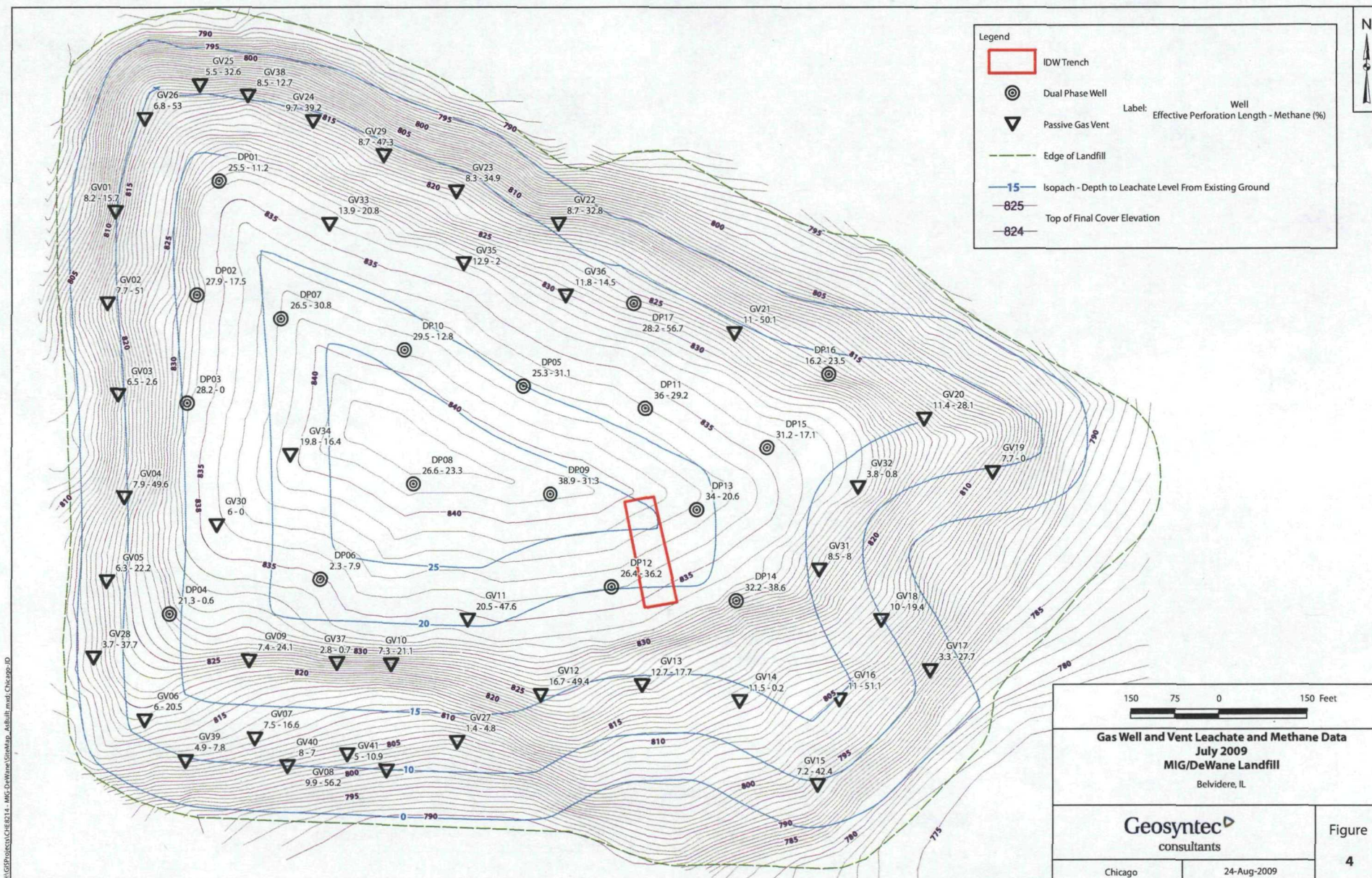


BASE MAP SOURCE: FINAL FOCUSED FEASIBILITY STUDY,
CLAYTON (1999)

Geosyntec[®] consultants CHICAGO, ILLINOIS			
CLIENT	BFI WASTE SYSTEMS OF NORTH AMERICA, LLC		
PROJECT	MIG/DEWANE LANDFILL BELVIDERE, ILLINOIS		
TITLE	SITE PLAN		
DRAWN BY	RCD	CHECK BY:	JPS
PROJECT	CH2214	FILENAME:	8214-008
DATE	21 DECEMBER 2008	FIGURE NUMBER:	2

H:\GIS\Projects\CH18\14_MIG DeWane\GridMap_Altitude_EBSC.mxd Chicago_ID





APPENDIX A

IEPA Authorization Letter

217/782-9881

November 3, 2008

Eric Ballinger
Allied Waste
26 W. 580 Schick Road
Hanover Park, Illinois 60133

John Seymour
Geosyntec Consultants
134 N. LaSalle Street, Suite 300
Chicago, Illinois 60602

Re: Final Gas Vent and Leachate Well Construction RAWP and Work Authorization
0070050002 – Boone County
MIG/DeWane NPL Site
Superfund/Technical Report

Dear Mr. Ballinger:

The Illinois Environmental Protection Agency (Illinois EPA) and Camp Dresser & McKee, Inc. (CDM) have reviewed Geosyntec's submittal, "Response to Comments- Installation of Landfill Gas Vents and Wells, MIG/DeWane Landfill Site, Belvidere, Illinois, dated October 21, 2008. Based on our October 14, 2008 conference call with BFI and Geosyntec and their October 21, 2008 letter, the Illinois EPA has determined that the responses are acceptable and the Illinois EPA authorizes BFI and Geosyntec to begin work to install 41 gas vents and 17 dual leachate wells within the MIG/DeWane Landfill.

Please provide to the Illinois EPA any necessary substitute language and pages to be incorporated into the previously submitted draft Gas Well and Vent Construction RA Work Plan. In addition, the Illinois EPA needs documentation as to the specific date that construction is planned to commence, and the date, time, and location of the pre-construction- site safety meeting. Also we will need a written agenda for the meeting with information on who is expected to attend.

For the on-site contractor trailer for construction activities, the Illinois EPA and its consultant, CDM will need within the trailer, one desk and chair to be provided as a work area for our joint oversight activities. At present, the individual expected to provide CDM's field oversight is as follows:

Helen Kummel L. Haase
HasseHKL@CDM.com

Cell 312-343-5881

Please respond to the Illinois EPA's request for additional information by Wednesday this week, to allow for our field oversight scheduling for this project. If you have any additional comments or questions, please contact me at the above telephone number. Thank you.

Sincerely,

Ricky G. Lanham
Project Manager
NPL Unit, Federal Site Remediation Section
Division of Remediation Management
Bureau of Land

cc: John Seymour, Geosyntec
Lisa Harrison, CDM
John Nyznyk, CDM
Helen Kümmel L. Haase, CDM
Howard Caine, USEPA

APPENDIX B

DP Well and GV Construction Documentation

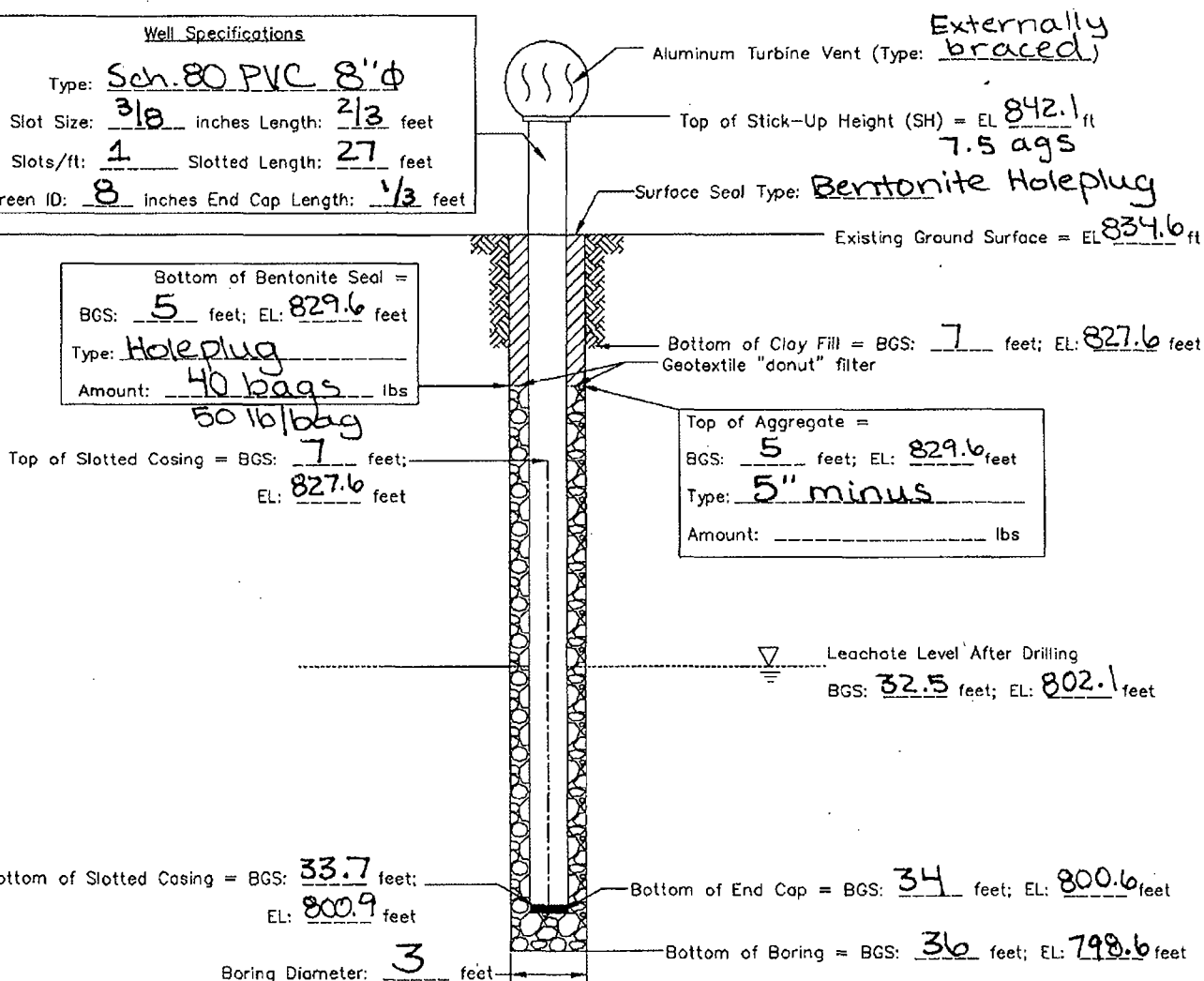
Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-01</u>	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company <u>Terra Engineering + Construction</u>	Inspector <u>KSK</u>	<u>DP-01</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/19/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>834.6</u>	Boring Depth <u>36</u>

Design depth = 35

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>27</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1/3</u> feet



Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-02</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-02</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/19/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>833.6</u>	Boring Depth <u>38.1</u>

Design depth = 38.1

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>30.1</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>828.6</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 826.6 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 841.1 ft
7.5 ags

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 833.6 ft

Bottom of Clay Fill = BGS: 4 feet; EL: 829.6 feet
Geotextile "donut" filter

Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>828.6</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

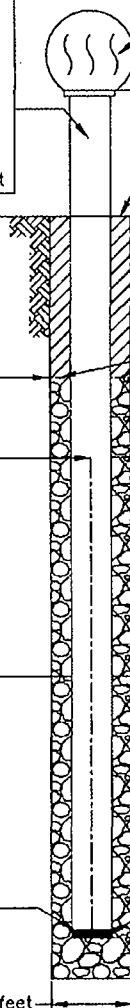
Leachate Level After Drilling
BGS: 34.9 feet; EL: 798.7 feet

Bottom of Slotted Casing = BGS: 36.8 feet;
EL: 796.8 feet

Bottom of End Cap = BGS: 37.1 feet; EL: 796.5 feet

Bottom of Boring = BGS: 38.1 feet; EL: 795.5 feet

Boring Diameter: 3 feet



Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-03</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-03</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/25/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>834.1</u>	Boring Depth <u>36.5</u>

Design depth = 36.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2 2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>28.5</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1 1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>829.1</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 827.1 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 841.6 ft

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 834.1 ft

Bottom of Clay Fill = BGS: 5 feet; EL: 829.1 feet
Geotextile "donut" filter

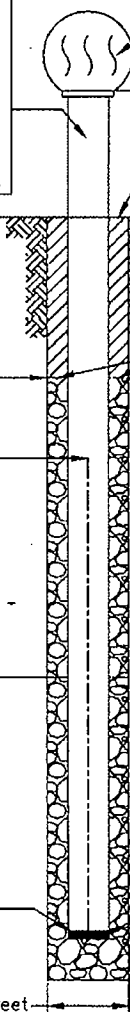
Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>829.1</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

Leachate Level After Drilling
BGS: N/A feet; EL: N/A feet

Bottom of Slotted Casing = BGS: 35.2 feet;
EL: 798.9 feet

Bottom of End Cap = BGS: 35.5 feet; EL: 798.6 feet

Boring Diameter: 3 feet
Bottom of Boring = BGS: 36.5 feet; EL: 797.6 feet



Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-04</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-04</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/2/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>828.3</u>	Boring Depth <u>33</u>

Design depth = 31.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2 1/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>23.5</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1 1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>823.3</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs <u>50 lb/bag</u>

Top of Slotted Casing = BGS: 7 feet;
EL: 821.3 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 835.8

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 828.3

Bottom of Clay Fill = BGS: 3.5 feet; EL: 824.8 feet
Geotextile "donut" filter

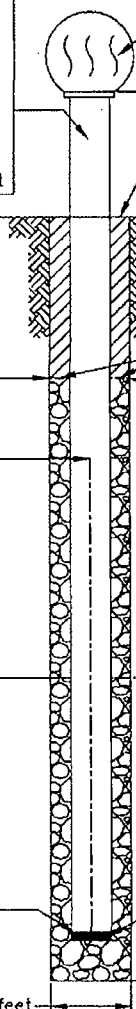
Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>823.3</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

Leachate Level After Drilling
BGS: 28.3 feet; EL: 800 feet

Bottom of Slotted Casing = BGS: 30.2 feet;
EL: 798.1 feet

Bottom of End Cap = BGS: 30.5 feet; EL: 797.8 feet

Boring Diameter: 3 feet
Bottom of Boring = BGS: 33 feet; EL: 795.3 feet



Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP - 05</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP - 05</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/18/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>838.4</u>	Boring Depth <u>47</u>

Design depth = 46.5

Well Specifications

Type: Sch. 80 PVC 8"φ

Slot Size: 3/8 inches Length: 2 1/3 feet

Slots/ft: 1 Slotted Length: 38.5 feet

Screen ID: 8 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =
BGS: 5 feet; EL: 833.4 feet

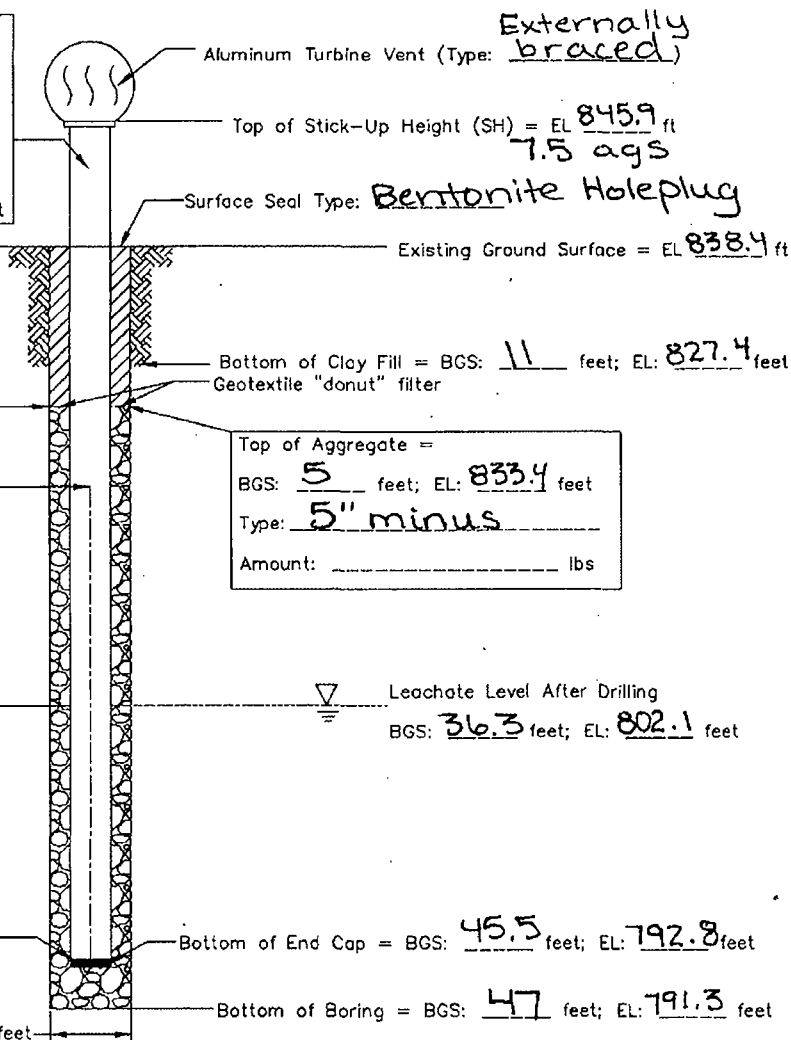
Type: Holeplug

Amount: 40 bags lbs
50 lb/bag

Top of Slotted Casing = BGS: 7 feet;
EL: 831.4 feet

Bottom of Slotted Casing = BGS: 45.2 feet;
EL: 793.1 feet

Boring Diameter: 3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-06</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-06</u>	
Driller Name (Last Name, First Name) <u>Smith Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/25/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>835.3</u>	Boring Depth <u>38</u>

Design depth = 36.8

Well Specifications

Type: Sch. 80 PVC 8" Ø

Slot Size: 3/8 inches Length: 2/3 feet

Slots/ft: 1 Slotted Length: 28.8 feet

Screen ID: 8 Inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =

BGS: 5 feet; EL: 830.3 feet

Type: Holeplug

Amount: 40 bags lbs
50 lb/bag

Top of Slotted Casing = BGS: 7 feet;
EL: 828.3 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 842.8 ft
7.5 ags

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 835.3 ft

Bottom of Clay Fill = BGS: 12 feet; EL: 823.3 feet

Geotextile "donut" filter

Top of Aggregate =

BGS: 5 feet; EL: 830.3 feet

Type: 5" minus

Amount: _____ lbs

Leachate Level After Drilling

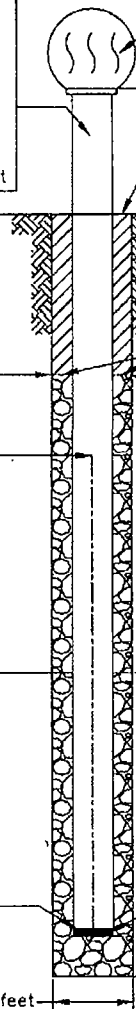
BGS: 14.3 feet; EL: 821 feet

Bottom of Slotted Casing = BGS: 35.5 feet;
EL: 799.8 feet

Bottom of End Cap = BGS: 35.8 feet; EL: 799.5 feet

Boring Diameter: 3 feet

Bottom of Boring = BGS: 38 feet; EL: 797.3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP - 07</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP - 07</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/19/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>839.7</u>	Boring Depth <u>45</u>

Design depth = 43.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8" φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>35.5</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1/2</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>834.7</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 832.7 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 847.2 ft
7.5 ags

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 839.7 ft

Bottom of Clay Fill = BGS: 15 feet; EL: 824.7 feet
Geotextile "donut" filter

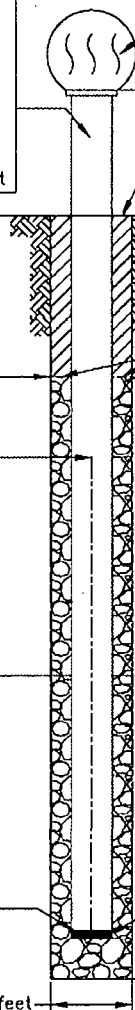
Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>834.7</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

Leachate Level After Drilling
BGS: 41.5 feet; EL: 798.2 feet

Bottom of Slotted Casing = BGS: 42.2 feet;
EL: 797.5 feet

Bottom of End Cap = BGS: 42.5 feet; EL: 797.2 feet

Boring Diameter: 3 feet
Bottom of Boring = BGS: 45 feet; EL: 794.7 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-08</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-08</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/24/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>840.1</u>	Boring Depth <u>47</u>

Design depth = 46

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>38</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>835.1</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 833.1 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 847.6

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 840.1

Bottom of Clay Fill = BGS: 10 feet; EL: 830.1 feet
Geotextile "donut" filter

Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>835.1</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

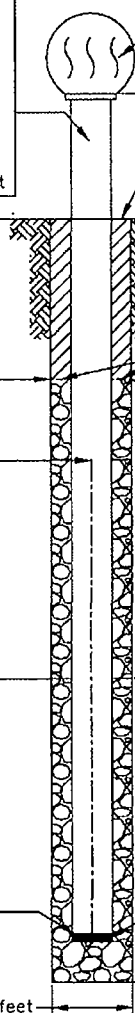
Leachate Level After Drilling
BGS: 36.6 feet; EL: 803.5 feet

Bottom of Slotted Casing = BGS: 44.7 feet;
EL: 795.4 feet

Bottom of End Cap = BGS: 45 feet; EL: 795.1 feet

Bottom of Boring = BGS: 47 feet; EL: 793.1 feet

Boring Diameter: 3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-09</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-09</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/24/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>841.7</u>	Boring Depth <u>51</u>

Design depth = 50.5

Well Specifications

Type: Sch. 80 PVC 8"φ

Slot Size: 3/8 inches Length: 2/3 feet

Slots/ft: 1 Slotted Length: 43 feet

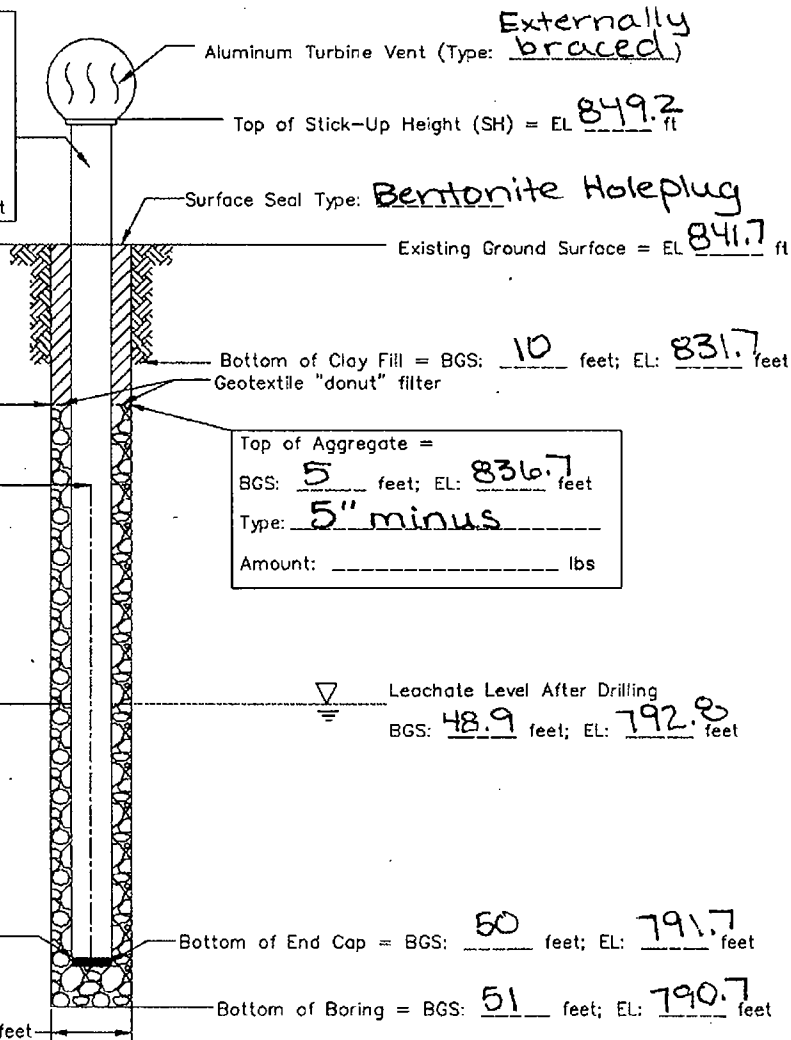
Screen ID: 8 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =
BGS: 5 feet; EL: 836.7 feet

Type: Holeplug

Amount: 40 bags lbs
50 lb/bag

Top of Slotted Casing = BGS: 7 feet;
EL: 834.7 feet



Bottom of Slotted Casing = BGS: 49.7 feet;
EL: 792 feet

Bottom of End Cap = BGS: 50 feet; EL: 791.7 feet

Bottom of Boring = BGS: 51 feet; EL: 790.7 feet

Boring Diameter: 3 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-10</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-10</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/19/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>838.3</u>	Boring Depth <u>45</u>

Design depth = 44.5

Well Specifications

Type: Sch. 80 PVC 8"φ

Slot Size: 3/16 inches Length: 2 1/3 feet

Slots/ft: 1 Slotted Length: 36.5 feet

Screen ID: 8 inches End Cap Length: 1 1/2 feet

Bottom of Bentonite Seal =

BGS: 5 feet; EL: 833.3 feet

Type: Holeplug

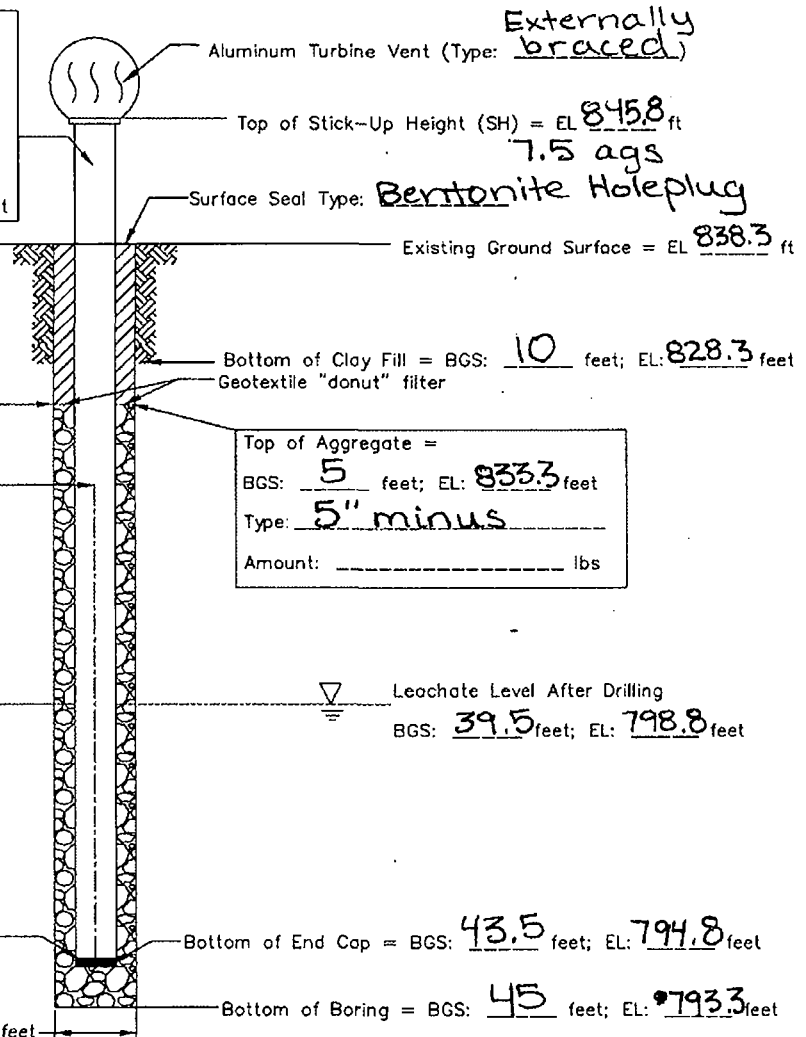
Amount: 40 bags lbs

50 lb/bag

Top of Slotted Casing = BGS: 7 feet;
EL: 831.3 feet

Bottom of Slotted Casing = BGS: 43.2 feet;
EL: 795.1 feet

Boring Diameter: 3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE8214		Well ID/Vent ID DP-11	
Driller Info Drilling Company Terra Engineering + Construction	Geosyntec Representative Inspector KSK	Boring ID DP-11	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/18/2008	Well/Vent Installation Date 12/8/2008	Elevation 837.2	Boring Depth 48

Design depth = 47.5

Well Specifications	
Type:	Sch. 80 PVC 8"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 39.5 feet
Screen ID:	8 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	5 feet; EL: 832.2 feet
Type:	Holeplug
Amount:	40 bags lbs

Top of Slotted Casing = BGS: **8** feet;
EL: **829.2** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **844.7** ft
7.5 ags

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **837.2** ft

Bottom of Clay Fill = BGS: **10.5** feet; EL: **826.7** feet
Geotextile "donut" filter

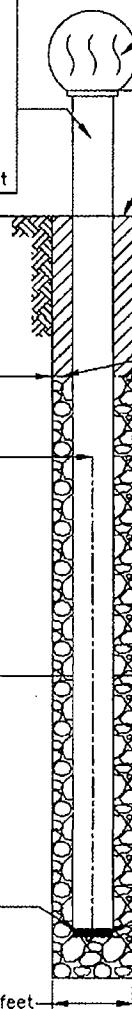
Top of Aggregate =	
BGS:	5 feet; EL: 832.2 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **46.5** feet; EL: **790.7** feet

Bottom of Slotted Casing = BGS: **47.2** feet;
EL: **790** feet

Bottom of End Cap = BGS: **47.5** feet; EL: **789.7** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **48** feet; EL: **789.2** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-12</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-12</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/12/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>836.1</u>	Boring Depth <u>43</u>

Design depth = 45

Well Specifications

Type: Sch. 80 PVC 8"φ

Slot Size: 3/8 inches Length: 2 1/3 feet

Slots/ft: 1 Slotted Length: 35 feet

Screen ID: 8 inches End Cap Length: 1 1/3 feet

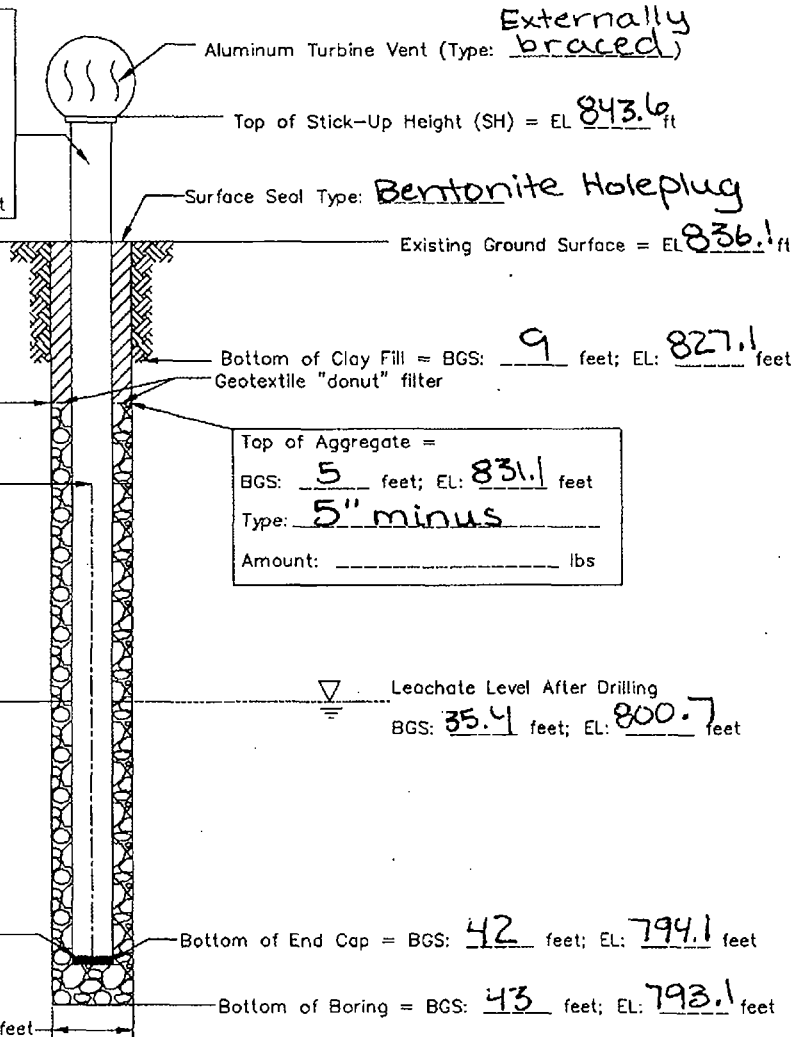
Bottom of Bentonite Seal =

BGS: 5 feet; EL: 831.1 feet

Type: Holeplug

Amount: 40 bags lbs
50 lb/bag

Top of Slotted Casing = BGS: 7 feet;
EL: 829.1 feet



Bottom of Slotted Casing = BGS: 41.7 feet;
EL: 794.4 feet

Bottom of End Cap = BGS: 42 feet; EL: 794.1 feet

Boring Diameter: 3 feet

Bottom of Boring = BGS: 43 feet; EL: 793.1 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

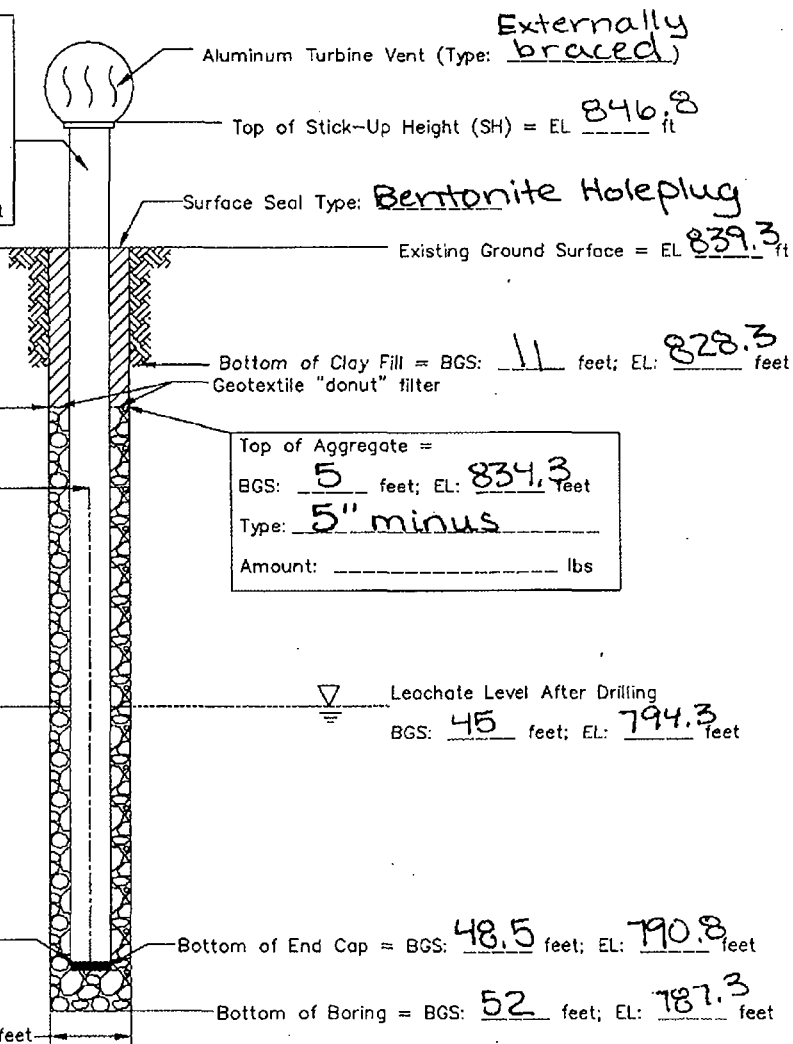
Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-13</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-13</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/12/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>839.3</u>	Boring Depth <u>52</u>

Design depth = 49.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> Inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>41.5</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1/2</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>834.3</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 832.3 feet



Bottom of Slotted Casing = BGS: 48.2 feet;
EL: 791.1 feet

Boring Diameter: 3 feet

Bottom of End Cap = BGS: 48.5 feet; EL: 790.8 feet

Bottom of Boring = BGS: 52 feet; EL: 787.3 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

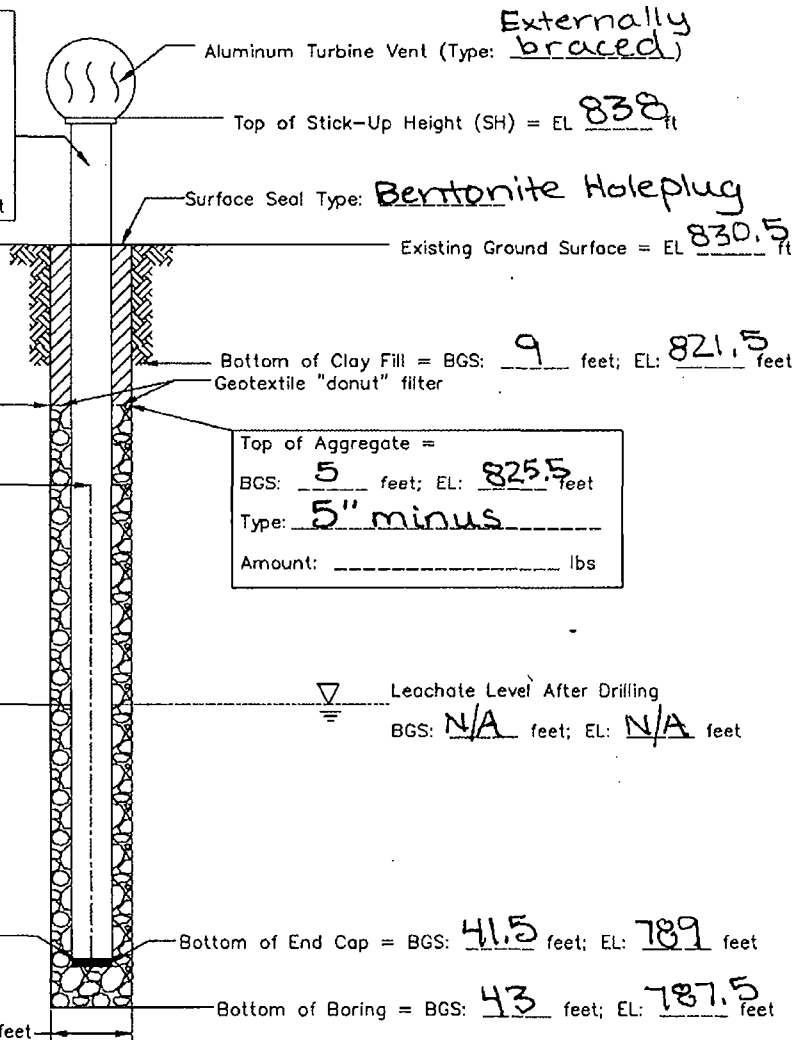
Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-14</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-14</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/2/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>830.5</u>	Boring Depth <u>43</u>

Design depth = 42.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8" Ø</u>
Slot Size:	<u>3/8</u> inches Length: <u>2 1/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>34.5</u> feet
Screen ID:	<u>8</u> inches End Cap Length: <u>1 1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>825.5</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>40 bags</u> lbs
	<u>50 lb/bag</u>

Top of Slotted Casing = BGS: 7 feet;
EL: 823.5 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE8214		Well ID/Vent ID DP-15	
Driller Info Drilling Company Terra Engineering + Construction	Geosyntec Representative Inspector KSK	Boring ID DP-15	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/18/2008	Well/Vent Installation Date 12/8/2008	Elevation 836.2	Boring Depth 48

Design depth = 47

Well Specifications	
Type:	Sch. 80 PVC 8"φ
Slot Size:	3/8 Inches Length: 2 1/3 feet
Slots/ft:	1 Slotted Length: 39 feet
Screen ID:	8 inches End Cap Length: 1 1/2 feet

Bottom of Bentonite Seal =	
BGS:	5 feet; EL: 831.2 feet
Type:	Holeplug
Amount:	40 bags lbs 50 lb/bag

Top of Slotted Casing = BGS: **7** feet; EL: **829.2** feet

Top of Aggregate =	
BGS:	5 feet; EL: 831.2 feet
Type:	5" minus
Amount:	_____ lbs

Existing Ground Surface = EL **836.2** ft

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **843.7** ft
7.5 ags

Surface Seal Type: **Bentonite Holeplug**

Bottom of Clay Fill = BGS: **10.5** feet; EL: **825.7** feet

Geotextile "donut" filter

Leachate Level After Drilling
BGS: **41.7** feet; EL: **794.5** feet

Bottom of Slotted Casing = BGS: **45.7** feet; EL: **790.5** feet

Bottom of End Cap = BGS: **46** feet; EL: **790.2** feet

Bottom of Boring = BGS: **48** feet; EL: **788.2** feet

Boring Diameter: **3** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE8214</u>		Well ID/Vent ID <u>DP-116</u>	
Driller Info Drilling Company <u>Terra Engineering + Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>DP-116</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/21/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>822.5</u>	Boring Depth <u>35</u>

Design depth = 33.5

Well Specifications	
Type:	<u>Sch. 80 PVC 8"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2/3</u> feet
Slots/ft:	<u>1</u> Slotted Length: <u>25.5</u> feet
Screen ID:	<u>8</u> Inches End Cap Length: <u>1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>5</u> feet; EL: <u>817.5</u> feet
Type:	<u>Hole plug</u>
Amount:	<u>40 bags</u> lbs

Top of Slotted Casing = BGS: 7 feet;
EL: 815.5 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 830 ft

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 822.5 ft

Bottom of Clay Fill = BGS: 3.5 feet; EL: 819 feet
Geotextile "donut" filter

Top of Aggregate =	
BGS:	<u>5</u> feet; EL: <u>817.5</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

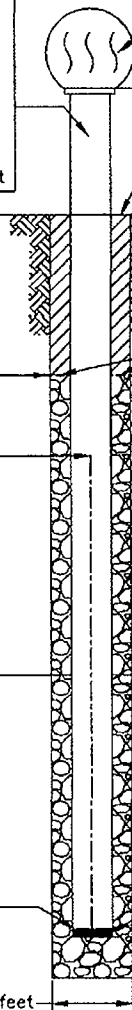
Leachate Level After Drilling
BGS: 23.2 feet; EL: 799.3 feet

Bottom of Slotted Casing = BGS: 32.2 feet;
EL: 790.3 feet

Bottom of End Cap = BGS: 32.5 feet; EL: 790 feet

Bottom of Boring = BGS: 35 feet; EL: 787.5 feet

Boring Diameter: 3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE8214		Well ID/Vent ID DP-17	
Driller Info Drilling Company Terra Engineering + Construction	Geosyntec Representative Inspector KSK	Boring ID DP-17	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/25/2008	Well/Vent Installation Date 12/8/2008	Elevation 827.2	Boring Depth 37

Design depth = 36.5

Well Specifications	
Type:	Sch. 80 PVC 8"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 28.5 feet
Screen ID:	8 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	5 feet; EL: 822.2 feet
Type:	Holeplug
Amount:	40 bags lbs

Top of Slotted Casing = BGS: **7** feet;
EL: **820.2** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **834.7** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **827.2** ft

Bottom of Clay Fill = BGS: **3** feet; EL: **824.2** feet
Geotextile "donut" filter

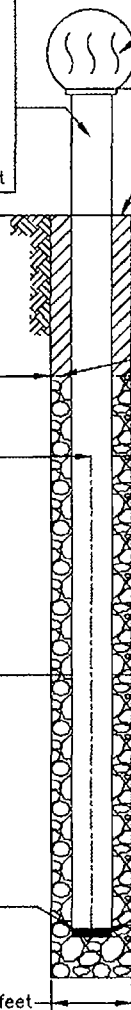
Top of Aggregate =	
BGS:	5 feet; EL: 822.2 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **N/A** feet; EL: **N/A** feet

Bottom of Slotted Casing = BGS: **35.2** feet;
EL: **792** feet

Bottom of End Cap = BGS: **35.5** feet; EL: **791.7** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **37** feet; EL: **790.2** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-01	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-01	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 812.6	Boring Depth 14

Design Depth = 14

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 2/3 feet
Slots/ft:	4 Slotted Length: 9 feet
Screen ID:	6 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 809.6 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet;
EL: **808.6** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **820.1** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **812.6** ft

Bottom of Clay Fill = BGS: **3** feet; EL: **809.6** feet
Geotextile "donut" filter

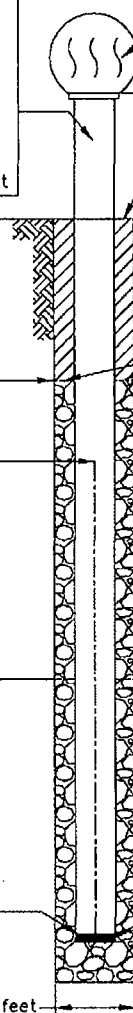
Top of Aggregate =	
BGS:	3 feet; EL: 809.6 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **12.2** feet; EL: **800.4** feet

Bottom of Slotted Casing = BGS: **12.7** feet;
EL: **799.9** feet

Bottom of End Cap = BGS: **13** feet; EL: **799.6** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **14** feet; EL: **798.6** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-02</u>	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company <u>Terra Engineering & Construction</u>	Inspector <u>KSK</u>	<u>GV-02</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/1/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>818.7</u>	Boring Depth <u>13</u>

Design Depth = 13

Well Specifications	
Type: <u>Sch. 80 PVC 6"φ</u>	Aluminum Turbine Vent (Type: <u>Externally braced</u>)
Slot Size: <u>3/8</u> inches Length: <u>2 1/3</u> feet	Top of Stick-Up Height (SH) = EL <u>826.2</u> ft
Slots/ft: <u>4</u> Slotted Length: <u>8</u> feet	Surface Seal Type: <u>Bentonite Holeplug</u>
Screen ID: <u>6</u> inches End Cap Length: <u>1 1/3</u> feet	Existing Ground Surface = EL <u>818.7</u> ft

Bottom of Bentonite Seal =	Bottom of Clay Fill = BGS: <u>3</u> feet; EL: <u>815.7</u> feet
BGS: <u>3</u> feet; EL: <u>815.7</u> feet	Geotextile "donut" filter
Type: <u>Holeplug</u>	Top of Aggregate =
Amount: <u>24 bags</u> lbs	BGS: <u>3</u> feet; EL: <u>815.7</u> feet
<u>50 lb/bag</u>	Type: <u>5" minus</u>
Top of Slotted Casing = BGS: <u>4</u> feet; EL: <u>814.7</u> feet	Amount: _____ lbs

Leachate Level After Drilling
BGS: N/A feet; EL: N/A feet

Bottom of Slotted Casing = BGS: 11.7 feet; EL: 807 feet

Bottom of End Cap = BGS: 12 feet; EL: 806.7 feet

Boring Diameter: 3 feet

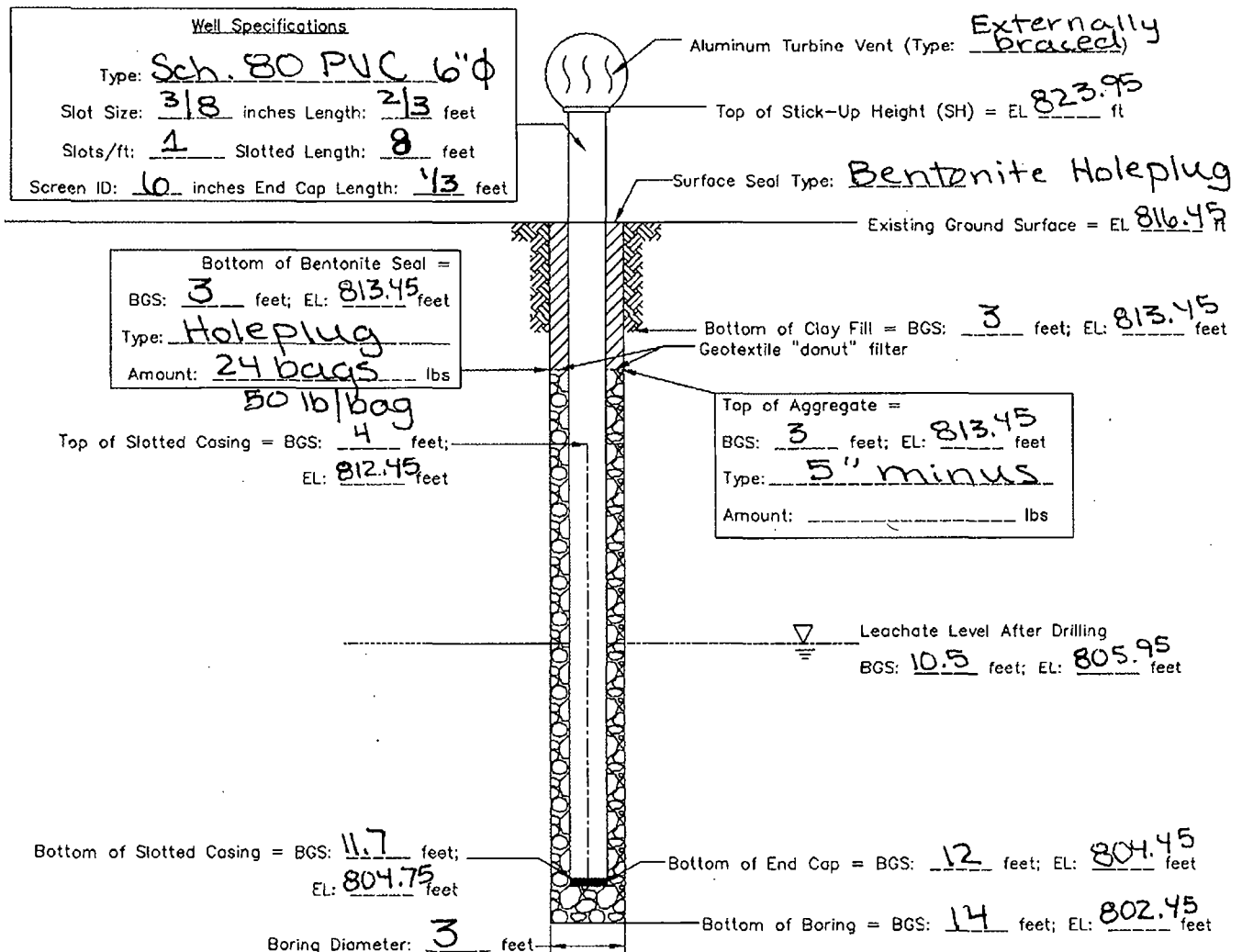
Bottom of Boring = BGS: 13 feet; EL: 805.7 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-03	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-03	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Elevation 816.45	Boring Depth 14

Design Depth = 13



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-04	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-04	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Elevation 871.4	Boring Depth 13

Design Depth = 13

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 8 feet
Screen ID:	10 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 868.4 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet;
EL: **867.4** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **878.9** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **871.4** ft

Bottom of Clay Fill = BGS: **2** feet; EL: **869.4** feet
Geotextile "donut" filter

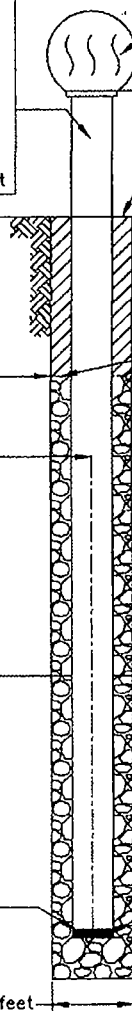
Top of Aggregate =	
BGS:	3 feet; EL: 868.4 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **N/A** feet; EL: **N/A** feet

Bottom of Slotted Casing = BGS: **11.7** feet;
EL: **859.5** feet

Bottom of End Cap = BGS: **12** feet; EL: **859.2** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **13** feet; EL: **858.2** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-05</u>	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company <u>Terra Engineering & Construction</u>	Inspector <u>KSK</u>	<u>GV-05</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/1/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>821.5</u>	Boring Depth <u>12</u>

Design Depth = 12

Well Specifications	
Type:	<u>Sch. 80 PVC 6"φ</u>
Slot Size:	<u>3/8</u> inches Length: <u>2 1/3</u> feet
Slots/ft:	<u>4</u> Slotted Length: <u>7</u> feet
Screen ID:	<u>10</u> inches End Cap Length: <u>1 1/3</u> feet

Bottom of Bentonite Seal =	
BGS:	<u>3</u> feet; EL: <u>818.5</u> feet
Type:	<u>Holeplug</u>
Amount:	<u>24 bags</u> lbs

Top of Slotted Casing = BGS: 4 feet;
EL: 817.5 feet

Aluminum Turbine Vent (Type: Externally braced)

Top of Stick-Up Height (SH) = EL 829 ft

Surface Seal Type: Bentonite Holeplug

Existing Ground Surface = EL 821.5 ft

Bottom of Clay Fill = BGS: 3 feet; EL: 818.5 feet
Geotextile "donut" filter

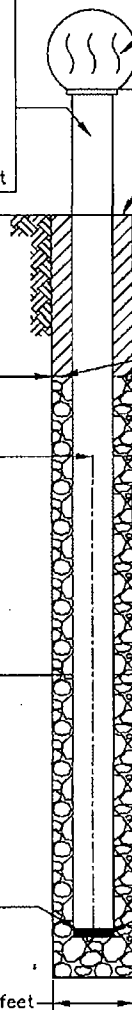
Top of Aggregate =	
BGS:	<u>3</u> feet; EL: <u>818.5</u> feet
Type:	<u>5" minus</u>
Amount:	_____ lbs

Leachate Level After Drilling
BGS: 10.3 feet; EL: 811.2 feet

Bottom of Slotted Casing = BGS: 10.7 feet;
EL: 810.8 feet

Bottom of End Cap = BGS: 11 feet; EL: 810.5 feet

Boring Diameter: 3 feet
Bottom of Boring = BGS: 12 feet; EL: 809.5 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-06	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-06	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 818.4	Boring Depth 15.5

Design Depth = 15.5

Well Specifications	
Type: Sch. 80 PVC 6"φ	Aluminum Turbine Vent (Type: Externally braced)
Slot Size: 3/8 inches Length: 2/3 feet	Top of Stick-Up Height (SH) = EL 825.9 ft
Slots/ft: 4 Slotted Length: 10.5 feet	Surface Seal Type: Bentonite Holeplug
Screen ID: 6 inches End Cap Length: 1/3 feet	Existing Ground Surface = EL 818.4 ft

Bottom of Bentonite Seal =	
BGS: 3 feet; EL: 815.4 feet	Bottom of Clay Fill = BGS: 2.5 feet; EL: 815.9 feet
Type: Holeplug	Geotextile "donut" filter
Amount: 24 bags lbs	Top of Aggregate =
50 lb/bag	BGS: 3 feet; EL: 815.4 feet
Top of Slotted Casing = BGS: 4 feet; EL: 814.4 feet	Type: 5' minus
	Amount: _____ lbs

Leachate Level After Drilling	
BGS: 11 feet; EL: 808.4 feet	

Bottom of Slotted Casing =	
BGS: 14.2 feet; EL: 804.2 feet	Bottom of End Cap = BGS: 14.5 feet; EL: 803.9 feet
Boring Diameter: 3 feet	Bottom of Boring = BGS: 15.5 feet; EL: 802.9 feet

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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-07	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-07	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 812.15	Boring Depth 16

Design Depth = 16

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2 1/3** feet

Slots/ft: **4** Slotted Length: **11** feet

Screen ID: **6** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

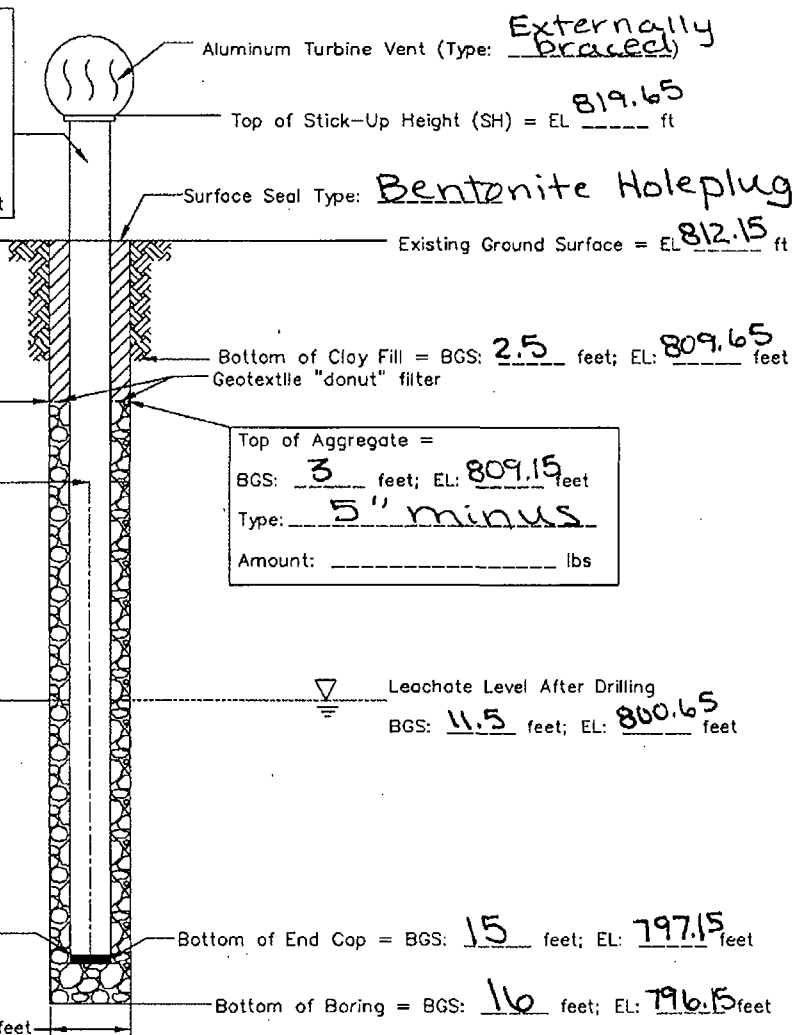
BGS: **3** feet; EL: **809.15** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **4** feet;
EL: **808.15** feet



Bottom of Slotted Casing = BGS: **14.7** feet;
EL: **797.45** feet

Bottom of End Cap = BGS: **15** feet; EL: **797.15** feet

Bottom of Boring = BGS: **16** feet; EL: **796.15** feet

Boring Diameter: **3** feet

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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-08	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-08	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/26/2008	Well/Vent Installation Date 12/8/2008	Elevation 805.14	Boring Depth 15.5

Design Depth = 15.5

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **10.5** feet

Screen ID: **60** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

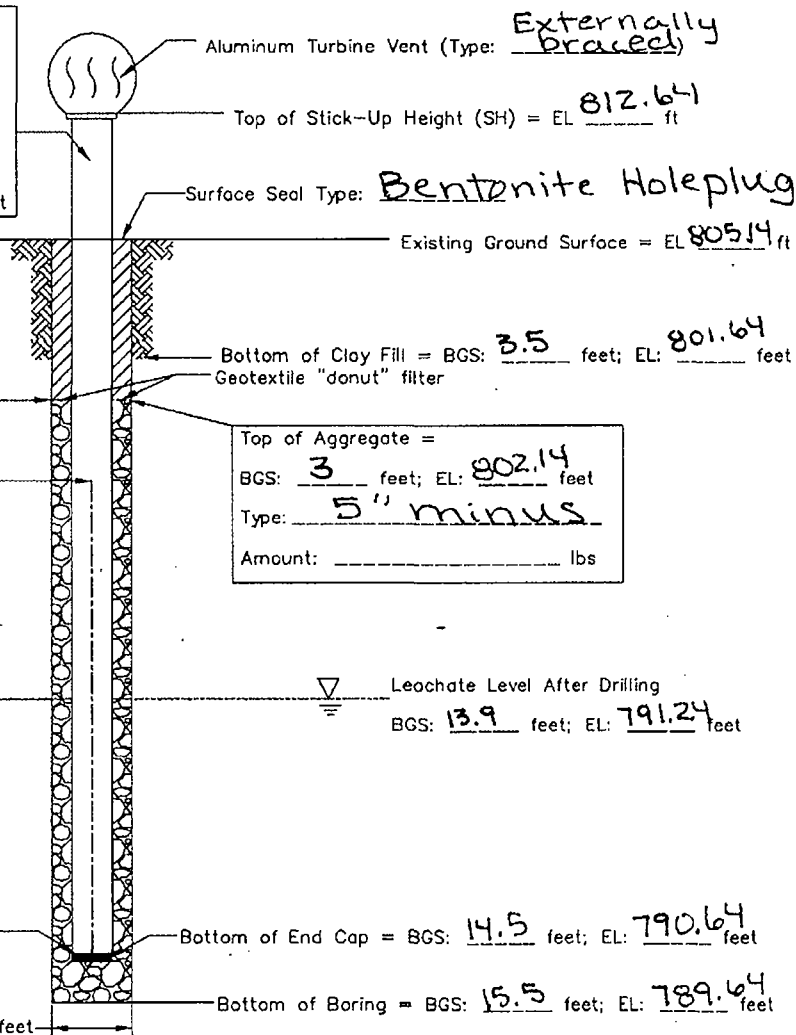
BGS: **3** feet; EL: **802.14** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **4** feet; EL: **801.14** feet



Bottom of Slotted Casing = BGS: **14.2** feet; EL: **790.94** feet

Bottom of End Cap = BGS: **14.5** feet; EL: **790.64** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **15.5** feet; EL: **789.64** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-09</u>	
Driller Info Drilling Company <u>Terra Engineering & Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>GV-09</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/1/2008</u>	Well/Vent Installation Date <u>12/11/2008</u>	Elevation <u>824.6</u>	Boring Depth <u>23</u>

Design Depth = 20.5

Well Specifications

Type: Sch. 80 PVC 6"φ

Slot Size: 3/8 inches Length: 2/3 feet

Slots/ft: 1 Slotted Length: 15.5 feet

Screen ID: 6 inches End Cap Length: 1/3 feet

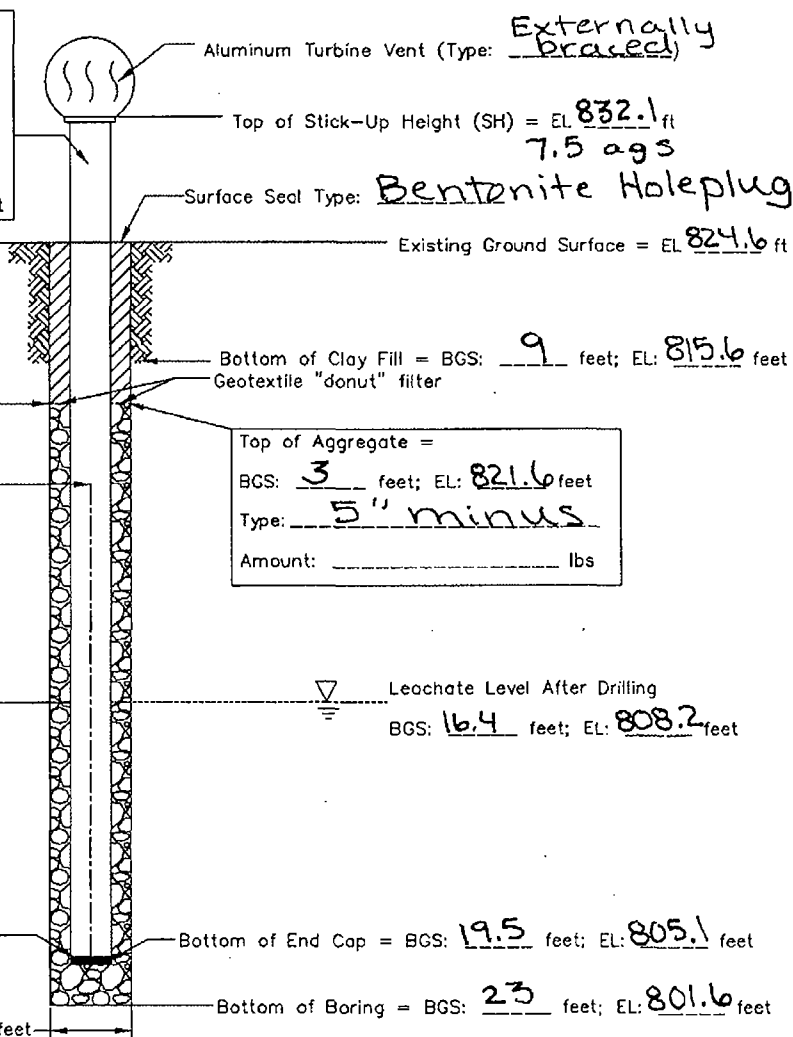
Bottom of Bentonite Seal =

BGS: 3 feet; EL: 821.6 feet

Type: Holeplug

Amount: 24 bags lbs

Top of Slotted Casing = BGS: 4 feet;
EL: 820.6 feet



Bottom of Slotted Casing = BGS: 19.2 feet;
EL: 805.4 feet

Bottom of End Cap = BGS: 19.5 feet; EL: 805.1 feet

Bottom of Boring = BGS: 23 feet; EL: 801.6 feet

Boring Diameter: 3 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

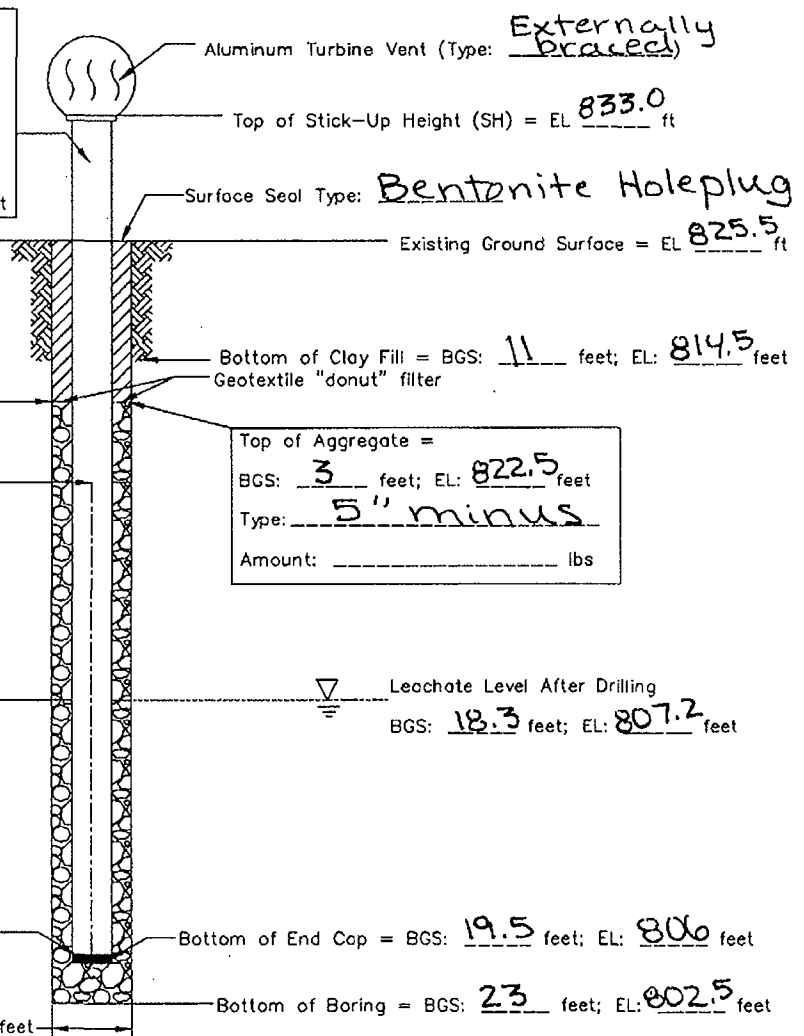
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Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-10	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/2/2008	Well/Vent Installation Date 12/11/2008	Elevation 825.5	Boring Depth 23

Design Depth = 20.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	1 Slotted Length: 15.5 feet
Screen ID:	60 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 822.5 feet
Type:	Holeplug
Amount:	24 bags 50 lb/bag

Top of Slotted Casing = BGS: **4 feet; EL: 821.5 feet**



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-11</u>	
Driller Info Drilling Company <u>Terra Engineering & Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>GV-11</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/25/2008</u>	Well/Vent Installation Date <u>12/11/2008</u>	Elevation <u>834.3</u>	Boring Depth <u>32</u>

Design Depth = 27
New design = 32

Well Specifications

Type: Sch. 80 PVC 6"φ

Slot Size: 3/8 inches Length: 2/3 feet

Slots/ft: 1 Slotted Length: 22 feet

Screen ID: 60 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =

BGS: 3 feet; EL: 831.3 feet

Type: Holeplug

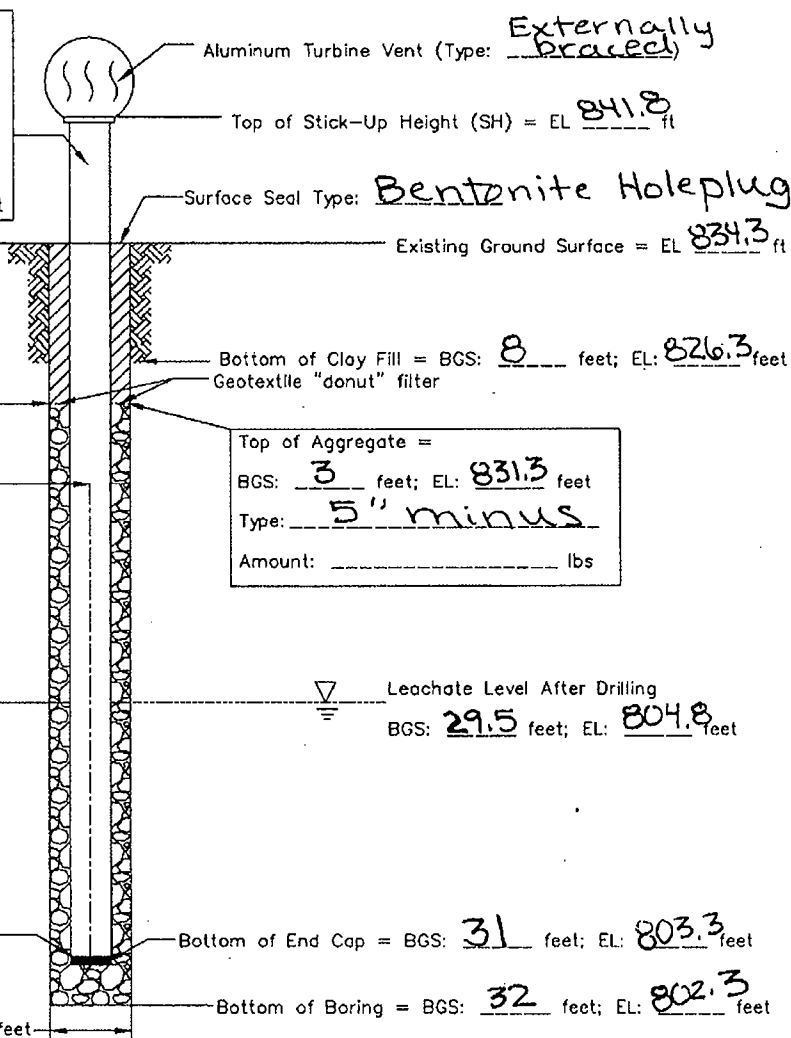
Amount: 24 bags lbs

50 lb/bag

Top of Slotted Casing = BGS: 9 feet;
EL: 825.3 feet

Bottom of Slotted Casing = BGS: 30.7 feet;
EL: 803.6 feet

Boring Diameter: 3 feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-12</u>	
Driller Info Drilling Company <u>Terra Engineering & Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>GV-12</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>12/2/2008</u>	Well/Vent Installation Date <u>12/11/2008</u>	Elevation <u>826.3</u>	Boring Depth <u>21</u>

Design Depth = 19

Well Specifications	
Type: <u>Sch. 80 PVC 6"φ</u>	
Slot Size: <u>3/8</u> inches	Length: <u>2 1/3</u> feet
Slots/ft: <u>1</u>	Slotted Length: <u>14</u> feet
Screen ID: <u>60</u> inches	End Cap Length: <u>1 1/3</u> feet

Bottom of Bentonite Seal =	
BGS: <u>3</u> feet;	EL: <u>823.3</u> feet
Type: <u>Holeplug</u>	
Amount: <u>24 bags</u>	lbs
<u>50 lb/bag</u>	
Top of Slotted Casing = BGS: <u>4</u> feet;	EL: <u>822.3</u> feet

Top of Aggregate =	
BGS: <u>3</u> feet;	EL: <u>823.3</u> feet
Type: <u>5" minus</u>	
Amount: _____	lbs

Leachate Level After Drilling	
BGS: <u>N/A</u> feet;	EL: <u>N/A</u> feet

Bottom of Slotted Casing = BGS: <u>17.7</u> feet;	
EL: <u>805.6</u> feet	

Bottom of End Cap = BGS: <u>18</u> feet;	
EL: <u>805.3</u> feet	

Bottom of Boring = BGS: <u>21</u> feet;	
EL: <u>802.3</u> feet	

Boring Diameter: 3 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-13	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-13	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 12/2/2008	Well/Vent Installation Date 12/11/2008	Elevation 819.5	Boring Depth 19

Design Depth = 18

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 13 feet
Screen ID:	60 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 816.5 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet; EL: **815.5** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **827** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **819.5** ft

Bottom of Clay Fill = BGS: **2** feet; EL: **817.5** feet
Geotextile "donut" filter

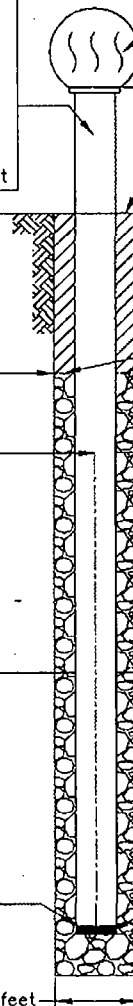
Top of Aggregate =	
BGS:	3 feet; EL: 816.5 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **N/A** feet; EL: **N/A** feet

Bottom of Slotted Casing = BGS: **16.7** feet; EL: **802.8** feet

Bottom of End Cap = BGS: **17** feet; EL: **802.5** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **19** feet; EL: **800.5** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-14	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-14	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/11/2008	Well/Vent Installation Date 12/11/2008	Elevation 811.8	Boring Depth 18.7

Design Depth = 18

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	1 Slotted Length: 13 feet
Screen ID:	60 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 808.8 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **5** feet; EL: **806.8** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **819.3** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **811.8** ft

Bottom of Clay Fill = BGS: **2.5** feet; EL: **809.3** feet
Geotextile "donut" filter

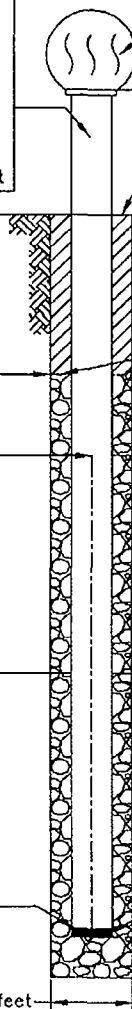
Top of Aggregate =	
BGS:	3 feet; EL: 808.8 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **16.5** feet; EL: **795.3** feet

Bottom of Slotted Casing = BGS: **17.7** feet; EL: **794.1** feet

Bottom of End Cap = BGS: **18** feet; EL: **793.8** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **18.7** feet; EL: **793.1** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-15	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-15	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/26/2008	Well/Vent Installation Date 12/8/2008	Elevation 793.9	Boring Depth 13

Design Depth = 13

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** Inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **8** feet

Screen ID: **10** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

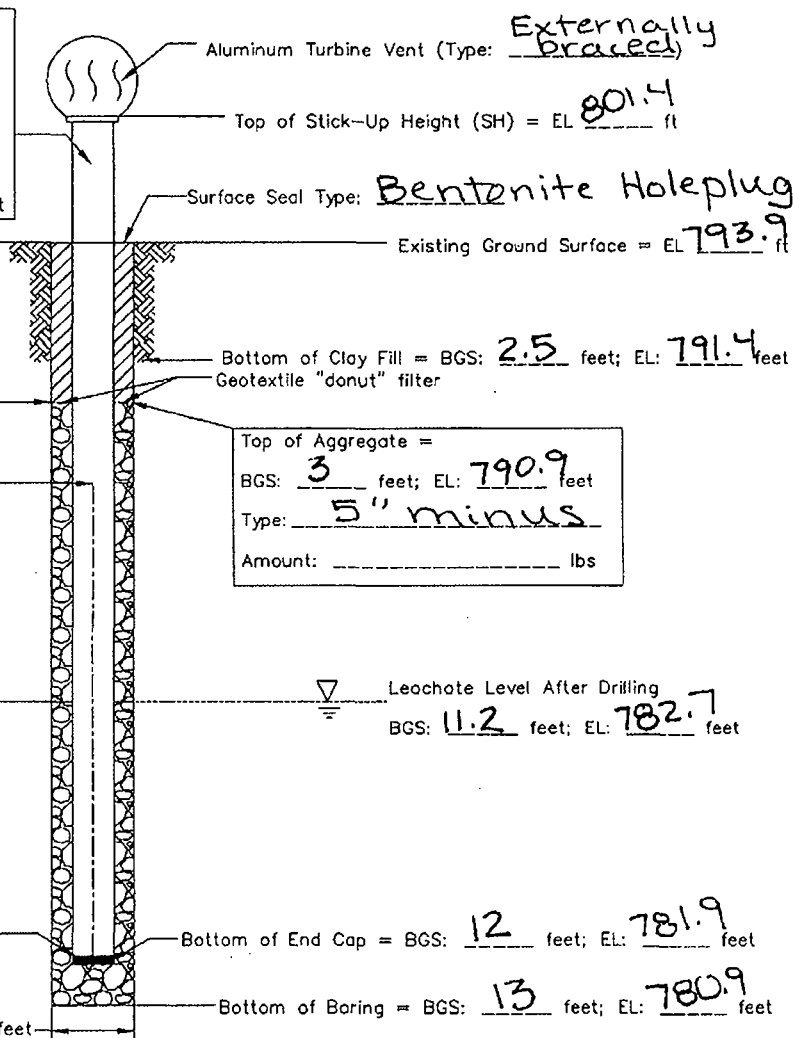
BGS: **3** feet; EL: **790.9** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **4** feet;
EL: **789.9** feet



Bottom of Slotted Casing = BGS: **11.7** feet;
EL: **782.2** feet

Bottom of End Cap = BGS: **12** feet; EL: **781.9** feet

Bottom of Boring = BGS: **13** feet; EL: **780.9** feet

Boring Diameter: **3** feet

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Design Depth = 18

-Bottom of Boring = BGS: 19 feet; EL: 785.4 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-17	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Location Belvidere, IL	
Checked By: Office Chicago		Northing	
Boring Completion Date 11/25/2008		Well/Vent Installation Date 12/8/2008	
		Elevation 794.4	Boring Depth 12

Design Depth = 12

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **4** Slotted Length: **6.5** feet

Screen ID: **60** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **791.4** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **5** feet; EL: **789.4** feet

Aluminum Turbine Vent (Type: **Externally brace**)

Top of Stick-Up Height (SH) = EL **801.9** ft
7.5 ags

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **794.4** ft

Bottom of Clay Fill = BGS: **2.5** feet; EL: **791.9** feet

Geotextile "donut" filter

Top of Aggregate =

BGS: **3** feet; EL: **791.4** feet

Type: **5" minus**

Amount: _____ lbs

Leachate Level After Drilling

BGS: **83** feet; EL: **786.1** feet

Bottom of Slotted Casing = BGS: **11.2** feet; EL: **783.2** feet

Bottom of End Cap = BGS: **11.5** feet; EL: **782.9** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **12** feet; EL: **782.4** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-18	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Checked By: Office Chicago	
Boring Completion Date 11/25/2008		Well/Vent Installation Date 12/8/2008	
		Elevation 811.5	Boring Depth 15.5

Design Depth = 15.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 10.5 feet
Screen ID:	60 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 808.5 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet; EL: **807.5** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **819** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **811.5** ft

Bottom of Clay Fill = BGS: **3** feet; EL: **808.5** feet
Geotextile "donut" filter

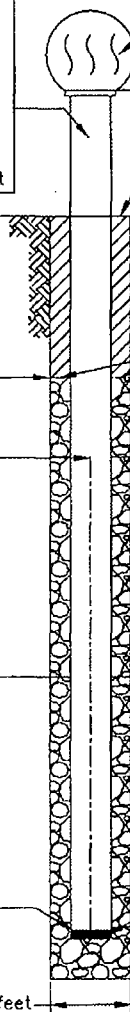
Top of Aggregate =	
BGS:	3 feet; EL: 808.5 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **14** feet; EL: **797.5** feet

Bottom of Slotted Casing = BGS: **14.2** feet; EL: **797.3** feet

Bottom of End Cap = BGS: **14.5** feet; EL: **797** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **15.5** feet; EL: **796** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-19	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-19	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 11/21/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 809.5	Boring Depth 14

Design Depth = 13

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	1 Slotted Length: 8 feet
Screen ID:	6 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 806.5 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet;
EL: **805.5** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **817** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **809.5** ft

Bottom of Clay Fill = BGS: **3.5** feet; EL: **806** feet
Geotextile "donut" filter

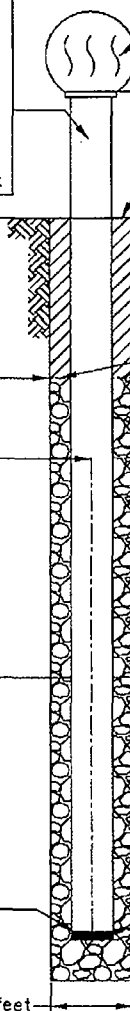
Top of Aggregate =	
BGS:	3 feet; EL: 806.5 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **N/A** feet; EL: **N/A** feet

Bottom of Slotted Casing = BGS: **11.7** feet;
EL: **797.8** feet

Bottom of End Cap = BGS: **12** feet; EL: **797.5** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **14** feet; EL: **795.5** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG DeWane CHE 8214		Well ID/Vent ID GV-20	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Location Belvidere, IL	
Boring Completion Date 11/21/2008		Well/Vent Installation Date 12/8/2008	
Checked By: Office Chicago		Elevation 817.8	
		Boring Depth 19	

Design Depth = 18

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2 1/3** feet

Slots/ft: **4** Slotted Length: **13** feet

Screen ID: **10** inches End Cap Length: **1 1/3** feet

Bottom of Bentonite Seal =

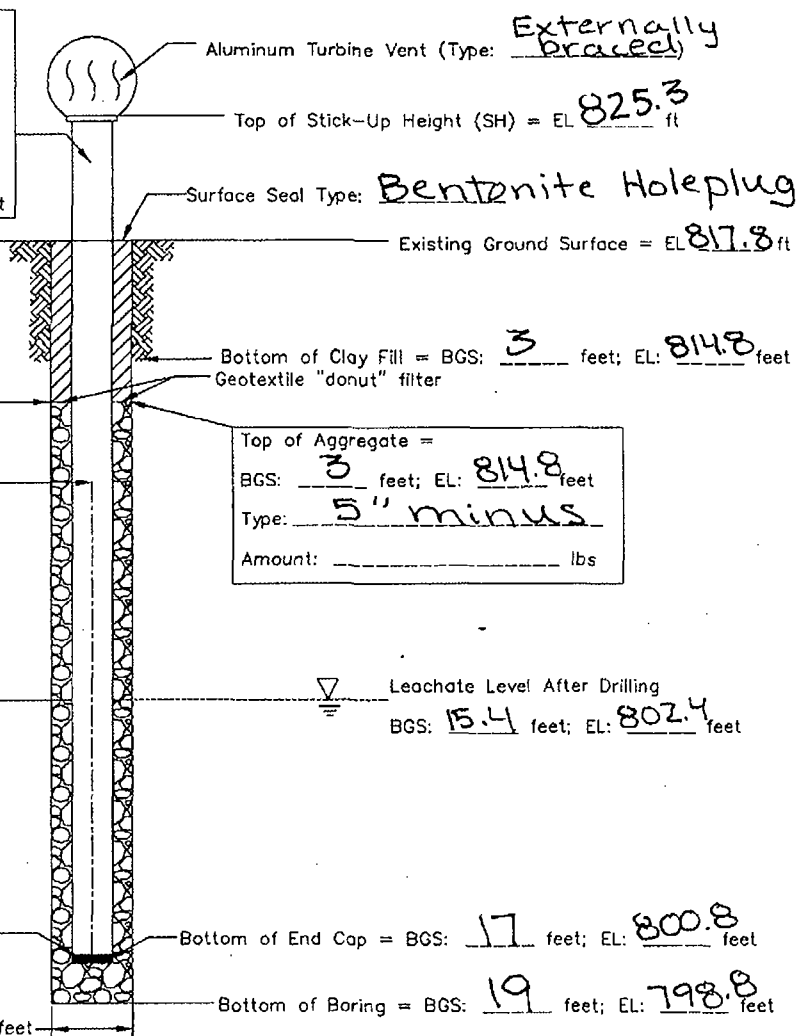
BGS: **3** feet; EL: **814.8** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **4** feet;
EL: **813.8** feet



Bottom of Slotted Casing = BGS: **16.7** feet;
EL: **801.1** feet

Bottom of End Cap = BGS: **17** feet; EL: **800.8** feet

Bottom of Boring = BGS: **19** feet; EL: **798.8** feet

Boring Diameter: **3** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-21	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-21	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/21/2008	Well/Vent Installation Date 12/8/2008	Elevation 824.6	Boring Depth 17

Design Depth = 16.5

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **11.5** feet

Screen ID: **6** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **821.6** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **5** feet;
EL: **819.6** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **832.1** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **824.6** ft

Bottom of Clay Fill = BGS: **3** feet; EL: **821.6** feet

Geotextile "donut" filter

Top of Aggregate =

BGS: **3** feet; EL: **821.6** feet

Type: **5" minus**

Amount: _____ lbs

Leachate Level After Drilling

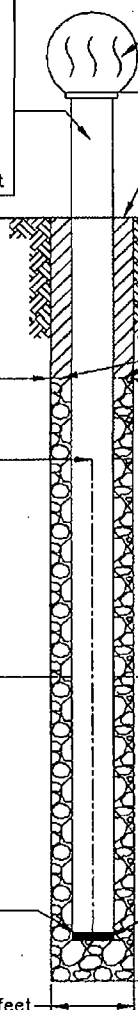
BGS: **16** feet; EL: **808.6** feet

Bottom of Slotted Casing = BGS: **16.2** feet;
EL: **808.4** feet

Bottom of End Cap = BGS: **16.5** feet; EL: **808.1** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **17** feet; EL: **807.6** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-22	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-22	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/8/2008	Elevation 817.3	Boring Depth 16

Design Depth = **15.5**

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **10.5** feet

Screen ID: **10** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

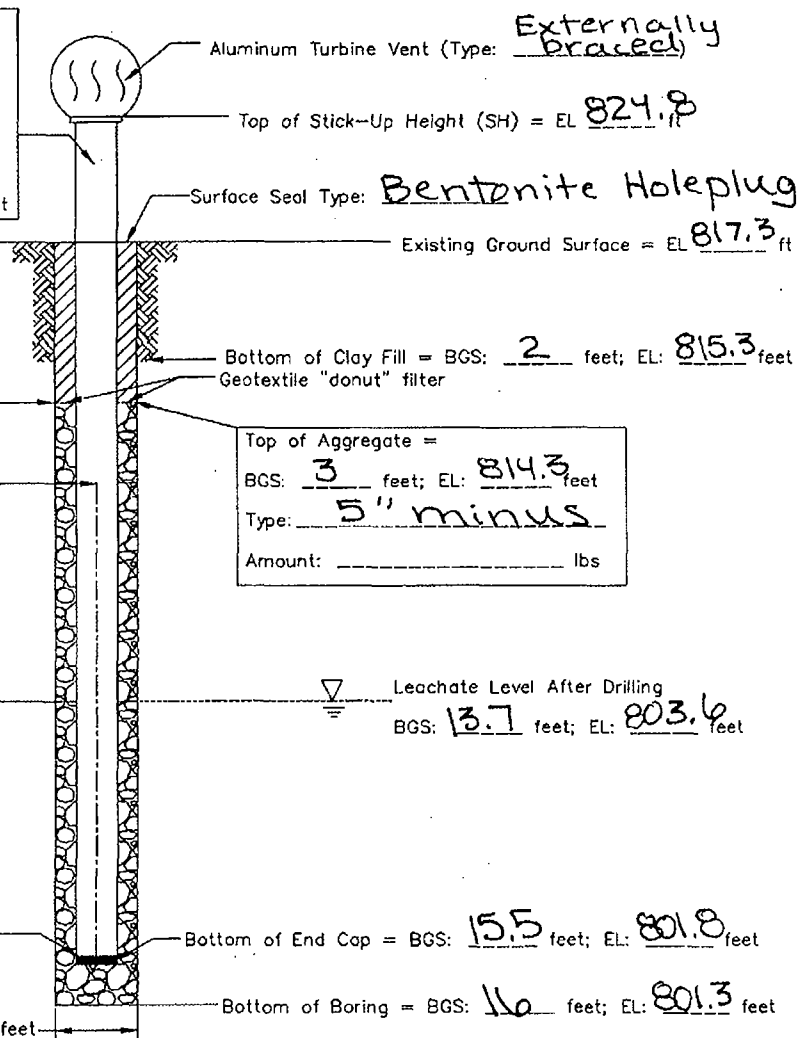
BGS: **3** feet; EL: **814.3** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **5** feet;
EL: **812.3** feet



Bottom of Slotted Casing = BGS: **15.2** feet;
EL: **802.1** feet

Bottom of End Cap = BGS: **15.5** feet; EL: **801.8** feet

Bottom of Boring = BGS: **16** feet; EL: **801.3** feet

Boring Diameter: **3** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-23	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Location Belvidere, IL	
Boring Completion Date 11/20/2008		Well/Vent Installation Date 12/8/2008	
Checked By: Office Chicago		Elevation 820.3	
		Boring Depth 16	

Design Depth = 15.5

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **10.5** feet

Screen ID: **60** Inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **817.3** feet

Type: **Holeplug**

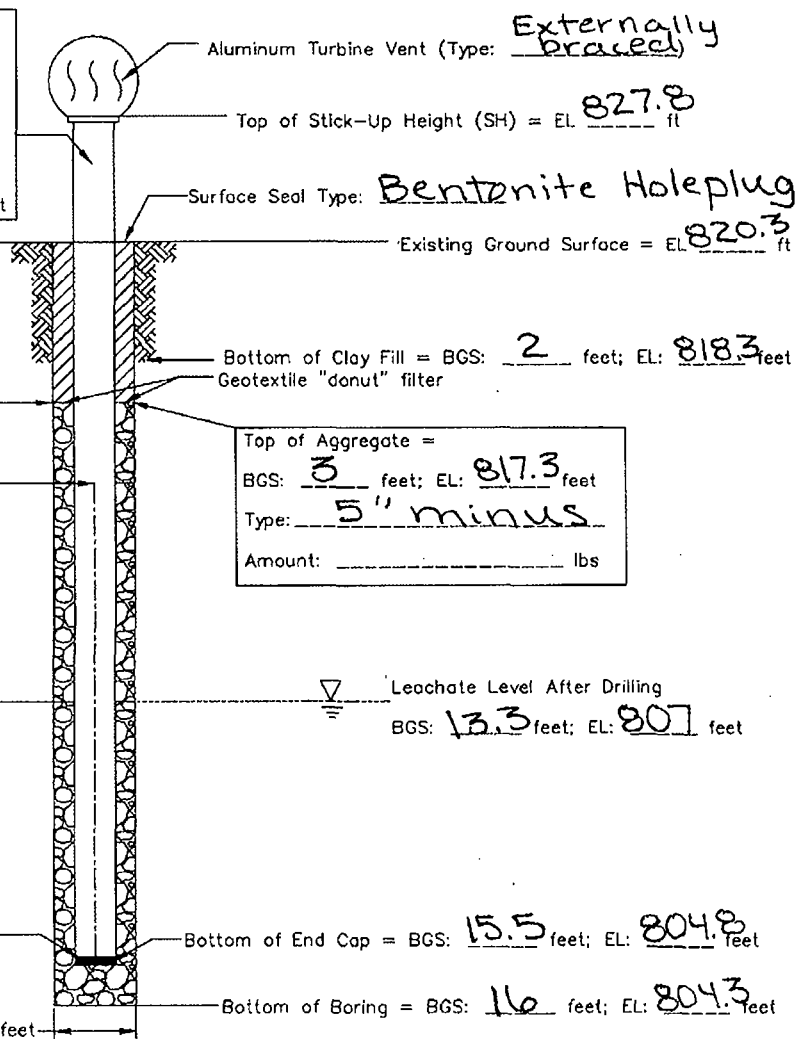
Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **5** feet;
EL: **815.3** feet

Bottom of Slotted Casing = BGS: **15.2** feet;
EL: **805.1** feet

Boring Diameter: **3** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-24	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Checked By: Office Chicago	
Boring Completion Date 11/20/2008		Well/Vent Installation Date 12/8/2008	
		Elevation 816.8	Boring Depth 17

Design Depth = 15.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 10.5 feet
Screen ID:	60 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 813.8 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **4** feet;
EL: **812.8** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **824.3** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **816.8** ft

Bottom of Clay Fill = BGS: **2.5** feet; EL: **814.3** feet
Geotextile "donut" filter

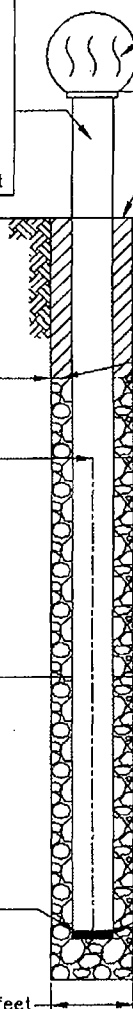
Top of Aggregate =	
BGS:	3 feet; EL: 813.8 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **13.7** feet; EL: **803.1** feet

Bottom of Slotted Casing = BGS: **14.2** feet;
EL: **802.6** feet

Bottom of End Cap = BGS: **14.5** feet; EL: **802.3** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **17** feet; EL: **799.8** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-25	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-25	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/8/2008	Elevation 811.6	Boring Depth 13

Design Depth = 13

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 8 feet
Screen ID:	6 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 808.6 feet
Type:	Holeplug
Amount:	24 bags 50 lb/bag

Top of Slotted Casing = BGS: 5 feet; EL: 806.6 feet

Top of Aggregate =	
BGS:	3 feet; EL: 808.6 feet
Type:	5" minus
Amount:	_____ lbs

Existing Ground Surface = EL 811.6 ft

Bottom of Clay Fill = BGS: 3 feet; EL: 808.6 feet

Geotextile "donut" filter

Leachate Level After Drilling
BGS: 10.5 feet; EL: 801.1 feet

Bottom of Slotted Casing = BGS: 12.7 feet; EL: 798.9 feet

Bottom of End Cap = BGS: 13 feet; EL: 798.6 feet

Bottom of Boring = BGS: 13 feet; EL: 798.6 feet

Boring Diameter: 3 feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-26	
Driller Info Drilling Company Terra Engineering & Construction		Geosyntec Representative Inspector KSK	
Driller Name (Last Name, First Name) Smith, Steve		Location Belvidere, IL	
Boring Completion Date 11/20/2008		Well/Vent Installation Date 12/8/2008	
Checked By: Office Chicago		Elevation 814.41	
		Boring Depth 15	

Design Depth = 14.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches
Length:	2/3 feet
Slots/ft:	1
Slotted Length:	9.5 feet
Screen ID:	60 inches
End Cap Length:	1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet
EL:	811.41 feet
Type:	Holeplug
Amount:	24 bags

Top of Slotted Casing = BGS: **5 feet**;
EL: **809.41 feet**

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **821.91** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **814.41** ft

Bottom of Clay Fill = BGS: **3 feet**; EL: **811.41** feet
Geotextile "donut" filter

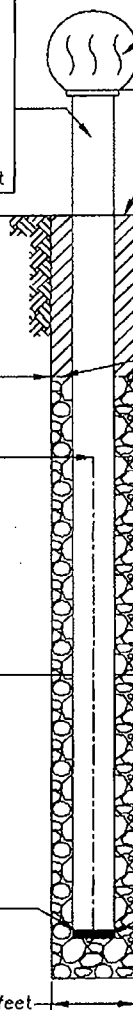
Top of Aggregate =	
BGS:	3 feet
EL:	811.41 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **11.8 feet**; EL: **802.61** feet

Bottom of Slotted Casing = BGS: **14.2 feet**;
EL: **800.21** feet

Bottom of End Cap = BGS: **14.5 feet**; EL: **799.91** feet

Boring Diameter: **3 feet**
Bottom of Boring = BGS: **15 feet**; EL: **799.41** feet



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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-27</u>	
Driller Info Drilling Company <u>Terra Engineering & Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>GV-27</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/26/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Elevation <u>804.76</u>	Boring Depth <u>13</u>

Design Depth = 17

Well Specifications

Type: Sch. 80 PVC 6"φ

Slot Size: 3/8 inches Length: 2 1/3 feet

Slots/ft: 4 Slotted Length: 8 feet

Screen ID: 60 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =

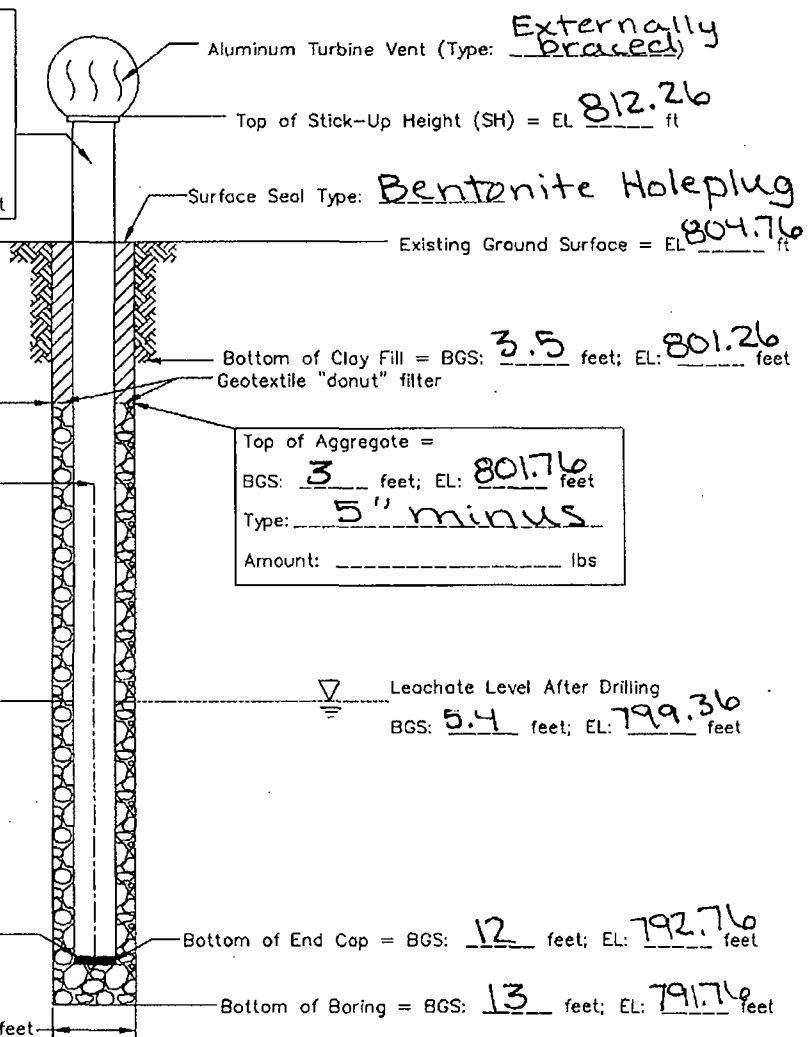
BGS: 3 feet; EL: 801.76 feet

Type: Holeplug

Amount: 24 bags lbs

50 lb/bag

Top of Slotted Casing = BGS: 4 feet; EL: 800.76 feet



Bottom of Slotted Casing = BGS: 11.7 feet; EL: 793.06 feet

Bottom of End Cap = BGS: 12 feet; EL: 792.76 feet

Bottom of Boring = BGS: 13 feet; EL: 791.76 feet

Boring Diameter: 3 feet

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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-28	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-28	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Elevation 818.4	Boring Depth 9

Design Depth = 9

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **4** Slotted Length: **4** feet

Screen ID: **60** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **815.4** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **4** feet;
EL: **814.4** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **825.9** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **818.4** ft

Bottom of Clay Fill = BGS: **3** feet; EL: **815.4** feet

Geotextile "donut" filter

Top of Aggregate =

BGS: **3** feet; EL: **815.4** feet

Type: **5" minus**

Amount: _____ lbs

Leachate Level After Drilling

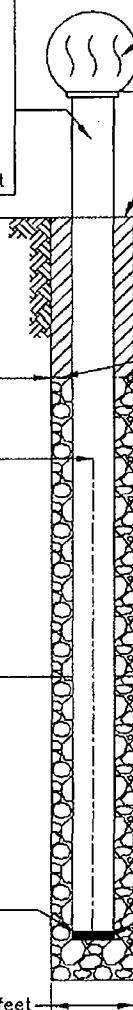
BGS: **N/A** feet; EL: **N/A** feet

Bottom of Slotted Casing = BGS: **7.7** feet;
EL: **810.7** feet

Bottom of End Cap = BGS: **8** feet; EL: **810.4** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **9** feet; EL: **809.4** feet



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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-29	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-29	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/8/2008	Elevation 817.1	Boring Depth 15

Design Depth = 14

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2 1/3** feet

Slots/ft: **1** Slotted Length: **9** feet

Screen ID: **10** inches End Cap Length: **1 1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **814.1** feet

Type: **Holeplug**

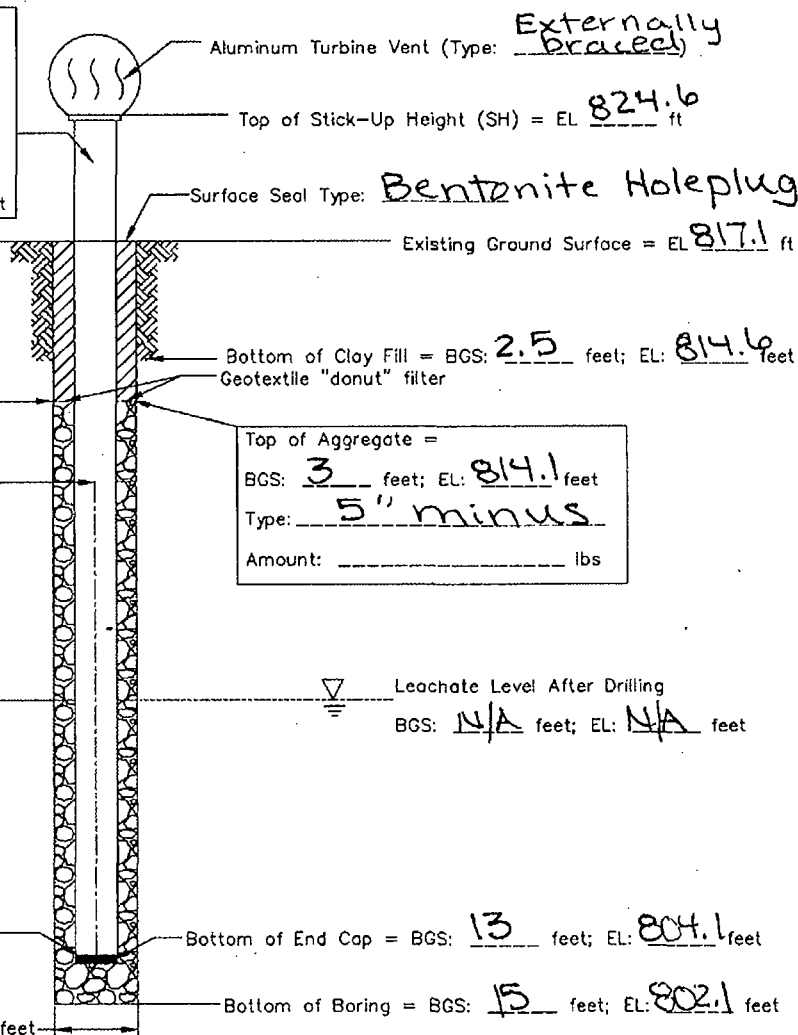
Amount: **24 bags**

50 lb/bag

Top of Slotted Casing = BGS: **4** feet;
EL: **813.1** feet

Bottom of Slotted Casing = BGS: **12.7** feet;
EL: **804.4** feet

Boring Diameter: **3** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-30	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-30	Location Belvidere, IL
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Northing	
Boring Completion Date 11/24/2008	Well/Vent Installation Date 12/8/2008	Elevation 836.8	Boring Depth 25

Design Depth = 20.5
New Design = 24.5

Well Specifications	
Type: Sch. 80 PVC 6"φ	
Slot Size: 3/8 inches Length: 2 1/3 feet	
Slots/ft: 1 Slotted Length: 15.5 feet	
Screen ID: 10 inches End Cap Length: 1 1/3 feet	

Bottom of Bentonite Seal =
BGS: **3** feet; EL: **833.8** feet

Type: **Holeplug**

Amount: **24 bags**
50 lb/bag

Top of Slotted Casing = BGS: **8** feet;
EL: **828.8** feet

Bottom of Slotted Casing = BGS: **23.2** feet;
EL: **813.6** feet

Boring Diameter: **3** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **844.3** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **836.8** ft

Bottom of Clay Fill = BGS: **7** feet; EL: **829.8** feet

Geotextile "donut" filter

Top of Aggregate =
BGS: **3** feet; EL: **833.8** feet

Type: **5" minus**

Amount: _____ lbs

Leachate Level After Drilling
BGS: **14** feet; EL: **822.8** feet

Bottom of End Cap = BGS: **23.5** feet; EL: **813.3** feet

Bottom of Boring = BGS: **25** feet; EL: **811.8** feet

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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-31	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-31	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 11/25/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 829.2	Boring Depth 25

Design Depth = 18
New Design = 25

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2 1/3** feet

Slots/ft: **4** Slotted Length: **15.5** feet

Screen ID: **10** inches End Cap Length: **1/3** feet

Bottom of Bentonite Seal =

BGS: **3** feet; EL: **826.7** feet

Type: **Holeplug**

Amount: **24 bags** lbs

50 lb/bag

Top of Slotted Casing = BGS: **8.5** feet;
EL: **820.7** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **836.7** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **829.2** ft

Bottom of Clay Fill = BGS: **10** feet; EL: **819.2** feet

Geotextile "donut" filter

Top of Aggregate =

BGS: **3** feet; EL: **826.7** feet

Type: **5" minus**

Amount: _____ lbs

Leachate Level After Drilling

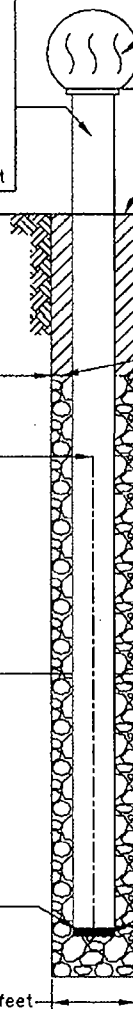
BGS: **18.5** feet; EL: **810.7** feet

Bottom of Slotted Casing = BGS: **23.7** feet;
EL: **805.5** feet

Bottom of End Cap = BGS: **24** feet; EL: **805.2** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **25** feet; EL: **804.2** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-32</u>	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company <u>Terra Engineering & Construction</u>	Inspector <u>KSK</u>	<u>GV-32</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/18/2008</u>	Well/Vent Installation Date <u>12/8/2008</u>	Northing	Easting
		Elevation <u>832</u>	Boring Depth <u>17.5</u>

Design Depth = 17

Well Specifications

Type: Sch. 80 PVC 6"φ

Slot Size: 3/8 Inches Length: 2 1/3 feet

Slots/ft: 4 Slotted Length: 12 feet

Screen ID: 10 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =

BGS: 3 feet; EL: 829 feet

Type: Holeplug

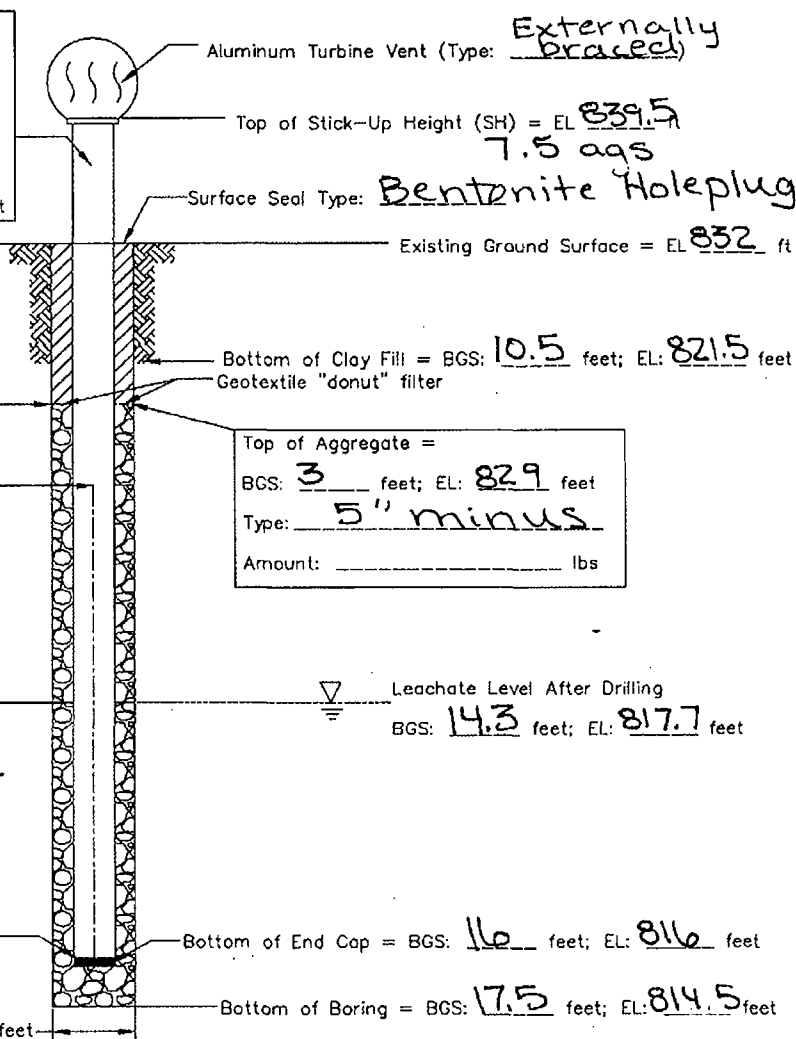
Amount: 24 bags lbs

50 lb/bag

Top of Slotted Casing = BGS: 4 feet;
EL: 828 feet

Bottom of Slotted Casing = BGS: 15.7 feet;
EL: 816.3 feet

Boring Diameter: 3 feet



Geosyntec[®] consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number <u>MIG/DeWane CHE 8214</u>		Well ID/Vent ID <u>GV-33</u>	
Driller Info Drilling Company <u>Terra Engineering & Construction</u>	Geosyntec Representative Inspector <u>KSK</u>	Boring ID <u>GV-33</u>	
Driller Name (Last Name, First Name) <u>Smith, Steve</u>	Checked By: Office <u>Chicago</u>	Location <u>Belvidere, IL</u>	
Boring Completion Date <u>11/20/2008</u>	Well/Vent Installation Date <u>12/11/2008</u>	Elevation <u>834.5</u>	Boring Depth <u>27</u>

Design Depth = 20
New Design = 26

Well Specifications Type: <u>Sch. 80 PVC 6"φ</u> Slot Size: <u>3/8</u> Inches Length: <u>2 1/3</u> feet Slots/ft: <u>1</u> Slotted Length: <u>15</u> feet Screen ID: <u>60</u> inches End Cap Length: <u>1 1/3</u> feet		
Bottom of Bentonite Seal = BGS: <u>3</u> feet; EL: <u>831.5</u> feet Type: <u>Holeplug</u> Amount: <u>24 bags</u> lbs <u>50 lb/bag</u>		
Top of Slotted Casing = BGS: <u>10</u> feet; EL: <u>824.5</u> feet		
Top of Aggregate = BGS: <u>3</u> feet; EL: <u>831.5</u> feet Type: <u>5' minus</u> Amount: _____ lbs		

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-34	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-34	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/24/2008	Well/Vent Installation Date 12/8/2008	Elevation 842.2	Boring Depth 37

Design Depth = 26
New Design = 37

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 21 feet
Screen ID:	60 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 839.2 feet
Type:	Holeplug
Amount:	24 bags lbs

50 lb/bag
Top of Slotted Casing = BGS: **15** feet;
EL: **827.2** feet

Aluminum Turbine Vent (Type: Externally braced)
Top of Stick-Up Height (SH) = EL **849.7** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **842.2** ft

Bottom of Clay Fill = BGS: **14** feet; EL: **828.2** feet
Geotextile "donut" filter

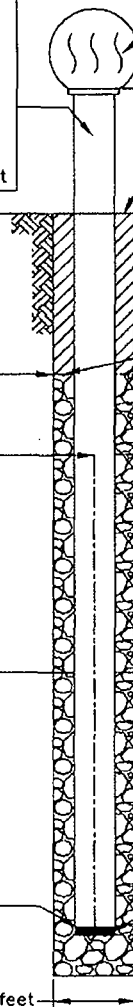
Top of Aggregate =	
BGS:	3 feet; EL: 839.2 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **34.8** feet; EL: **807.4** feet

Bottom of Slotted Casing = BGS: **35.7** feet;
EL: **806.5** feet

Bottom of End Cap = BGS: **36** feet; EL: **806.2** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **37** feet; EL: **805.2** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-35	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-35	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/11/2008	Elevation 833.6	Boring Depth 23

Design Depth = 19.5
New Design = 22.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	1 Slotted Length: 14.5 feet
Screen ID:	60 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 830.6 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **7** feet;
EL: **826.6** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **841.1** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **833.6** ft

Bottom of Clay Fill = BGS: **6** feet; EL: **827.6** feet
Geotextile "donut" filter

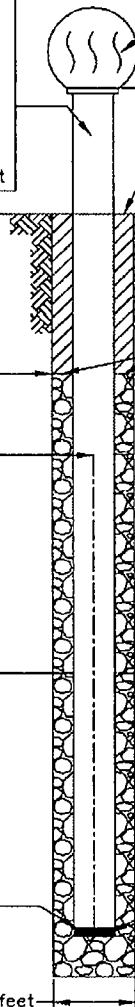
Top of Aggregate =	
BGS:	3 feet; EL: 830.6 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **19.9** feet; EL: **813.7** feet

Bottom of Slotted Casing = BGS: **21.2** feet;
EL: **812.4** feet

Bottom of End Cap = BGS: **21.5** feet; EL: **812.1** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **23** feet; EL: **810.6** feet



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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-36	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-36	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/11/2008	Elevation 831.3	Boring Depth 21.5

Design Depth = 18
New Design = 21.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2/3 feet
Slots/ft:	4 Slotted Length: 13 feet
Screen ID:	10 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 828.3 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **7.5** feet;
EL: **823.8** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **838.8** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **831.3** ft

Bottom of Clay Fill = BGS: **6.5** feet; EL: **824.8** feet
Geotextile "donut" filter

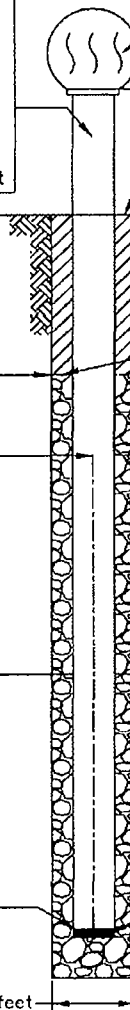
Top of Aggregate =	
BGS:	3 feet; EL: 828.3 feet
Type:	5" minus
Amount:	_____ lbs

Leachate Level After Drilling
BGS: **19.3** feet; EL: **812** feet

Bottom of Slotted Casing = BGS: **20.2** feet;
EL: **811.1** feet

Bottom of End Cap = BGS: **20.5** feet; EL: **810.8** feet

Boring Diameter: **3** feet
Bottom of Boring = BGS: **21.5** feet; EL: **809.8** feet



Geosyntec[®]

consultants

DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-37	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-37	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/2/2008	Well/Vent Installation Date 12/8/2008	Elevation 825.6	Boring Depth 21

Design Depth = 20.5

Well Specifications

Type: **Sch. 80 PVC 6"φ**

Slot Size: **3/8** inches Length: **2/3** feet

Slots/ft: **1** Slotted Length: **15.5** feet

Screen ID: **60** inches End Cap Length: **1/3** feet

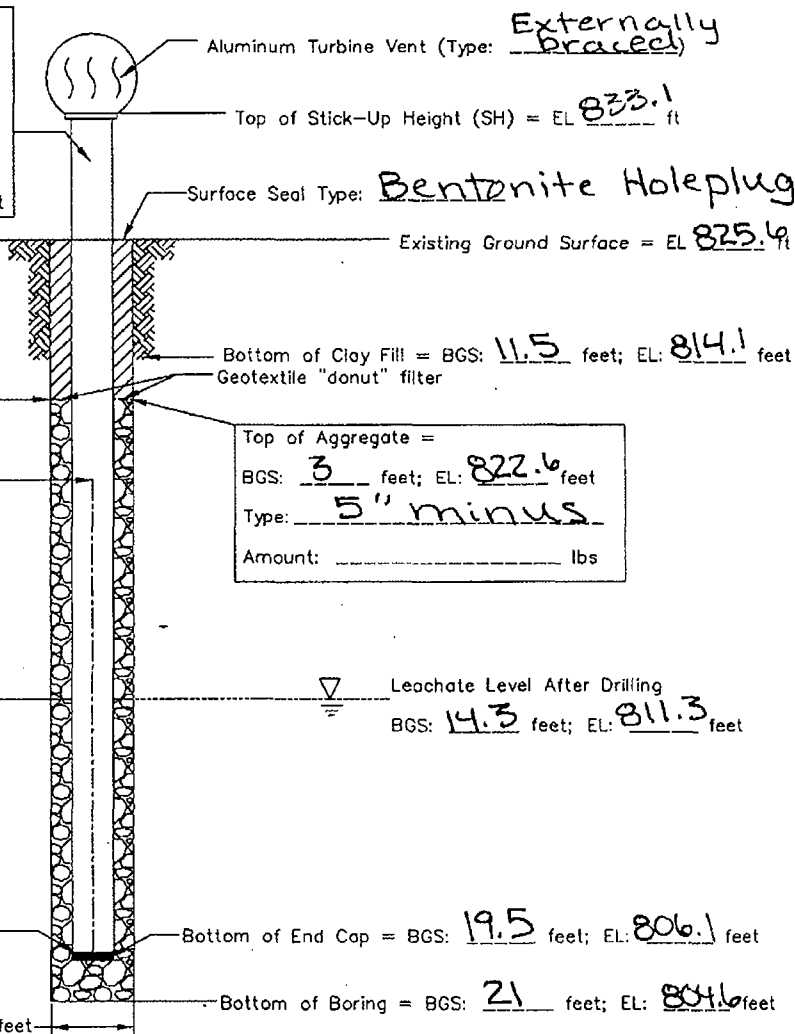
Bottom of Bentonite Seal =

BGS: **3** feet; EL: **822.6** feet

Type: **Holeplug**

Amount: **24 bags** lbs

Top of Slotted Casing = BGS: **4** feet;
EL: **821.6** feet



Bottom of Slotted Casing = BGS: **19.2** feet;
EL: **806.4** feet

Bottom of End Cap = BGS: **19.5** feet; EL: **806.1** feet

Boring Diameter: **3** feet

Bottom of Boring = BGS: **21** feet; EL: **804.6** feet

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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-38	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-38	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/20/2008	Well/Vent Installation Date 12/8/2008	Elevation 817.38	Boring Depth 15

Design Depth = 15

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 10 feet
Screen ID:	6 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 814.38 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **5** feet;
EL: **812.38** feet

Aluminum Turbine Vent (Type: **Externally braced**)
Top of Stick-Up Height (SH) = EL **824.88** ft
Surface Seal Type: **Bentonite Holeplug**
Existing Ground Surface = EL **817.38** ft

Bottom of Clay Fill = BGS: **2** feet; EL: **815.38** feet
Geotextile "donut" filter

Top of Aggregate =	
BGS:	3 feet; EL: 814.38 feet
Type:	5" minus
Amount:	_____ lbs

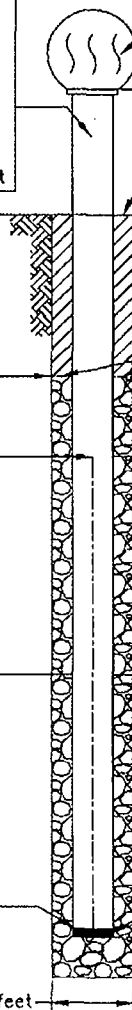
Leachate Level After Drilling
BGS: **13.5** feet; EL: **203.88** feet

Bottom of Slotted Casing = BGS: **14.7** feet;
EL: **802.68** feet

Bottom of End Cap = BGS: **15** feet; EL: **802.38** feet

Bottom of Boring = BGS: **15** feet; EL: **802.38** feet

Boring Diameter: **3** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-39	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-39	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 12/1/2008	Well/Vent Installation Date 12/8/2008	Elevation 811.3	Boring Depth 13.5

Design Depth = 13.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 8.5 feet
Screen ID:	10 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 808.3 feet
Type:	Holeplug
Amount:	24 bags lbs
50 lb/bag	
Top of Slotted Casing = BGS:	4 feet; EL: 807.3 feet

Top of Aggregate =	
BGS:	3 feet; EL: 808.3 feet
Type:	5" minus
Amount:	_____ lbs

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **818.8** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **811.3** ft

Bottom of Clay Fill = BGS: **2.5** feet; EL: **808.8** feet

Geotextile "donut" filter

Leachate Level After Drilling
BGS: **8.9** feet; EL: **802.4** feet

Bottom of Slotted Casing = BGS: **12.2** feet; EL: **799.1** feet

Bottom of End Cap = BGS: **12.5** feet; EL: **798.8** feet

Bottom of Boring = BGS: **13.5** feet; EL: **797.8** feet

Boring Diameter: **3** feet

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DUAL PHASE WELL AND (PASSIVE GAS VENT) CONSTRUCTION FORM

Project Name/ Project Number MIG DeWane CHE 8214		Well ID/Vent ID GV-40	
Driller Info	Geosyntec Representative	Boring ID	
Drilling Company Terra Engineering & Construction	Inspector KSK	GV-40	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Chicago	Location Belvidere, IL	
Boring Completion Date 11/26/2008	Well/Vent Installation Date 12/8/2008	Northing	Easting
		Elevation 805.05	Boring Depth 13.5

Design Depth = 13.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	1 Slotted Length: 8.5 feet
Screen ID:	10 inches End Cap Length: 1 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 802.05 feet
Type:	Holeplug
Amount:	24 bags lbs

Top of Slotted Casing = BGS: **5** feet; EL: **800.05** feet

Aluminum Turbine Vent (Type: **Externally braced**)

Top of Stick-Up Height (SH) = EL **812.55** ft

Surface Seal Type: **Bentonite Holeplug**

Existing Ground Surface = EL **805.05** ft

Bottom of Clay Fill = BGS: **3.5** feet; EL: **801.55** feet
Geotextile "donut" filter

Top of Aggregate =	
BGS:	3 feet; EL: 802.05 feet
Type:	5" minus
Amount:	_____ lbs

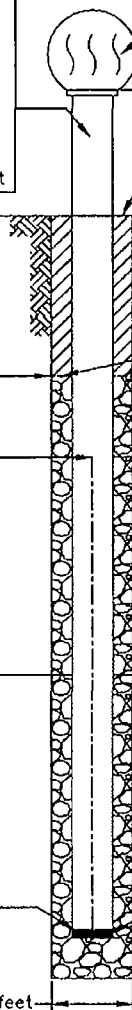
Leachate Level After Drilling
BGS: **13** feet; EL: **792.05** feet

Bottom of Slotted Casing = BGS: **13.2** feet; EL: **791.85** feet

Bottom of End Cap = BGS: **13.5** feet; EL: **791.55** feet

Bottom of Boring = BGS: **13.5** feet; EL: **791.55** feet

Boring Diameter: **3** feet



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DUAL PHASE WELL AND PASSIVE GAS VENT CONSTRUCTION FORM

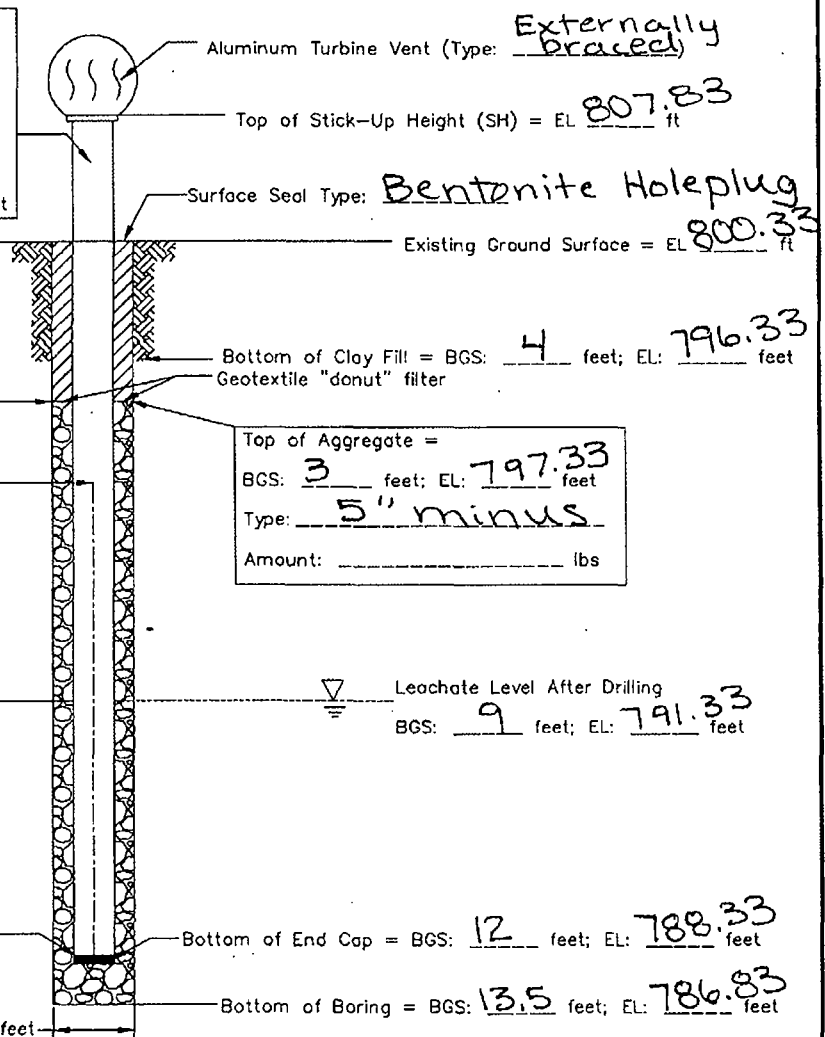
Project Name/ Project Number MIG/DeWane CHE 8214		Well ID/Vent ID GV-41	
Driller Info Drilling Company Terra Engineering & Construction	Geosyntec Representative Inspector KSK	Boring ID GV-41	
Driller Name (Last Name, First Name) Smith, Steve	Checked By: Office Chicago	Location Belvidere, IL	
Boring Completion Date 11/26/2008	Well/Vent Installation Date 12/8/2008	Elevation 800.33	Boring Depth 13.5

Design Depth = 13.5

Well Specifications	
Type:	Sch. 80 PVC 6"φ
Slot Size:	3/8 inches Length: 2 1/3 feet
Slots/ft:	4 Slotted Length: 8 feet
Screen ID:	10 inches End Cap Length: 1/3 feet

Bottom of Bentonite Seal =	
BGS:	3 feet; EL: 797.33 feet
Type:	Holeplug
Amount:	24 bags

50 lb/bag
Top of Slotted Casing = BGS: **4 feet;**
EL: **796.33 feet**



APPENDIX C

Aggregate Filter Pack Gradation Curve

Proctor Test Results

Falling Head Permeability Test Results

IDW Cover Soil Classification

Field Density Measurements

Aggregate Filter Pack Gradation Curve

Terracon

4836 Colt Road

Rockford, Illinois 61109

815-873-0990

Physical Properties of Aggregates

Client Name: Terra Engineering & Construction Corp.
 Address: 2201 Vondron Road
Madison, WI 53701

Project Name: Clear Lake Sand and Gravel
 Location: Ipsen Road, Belvidere, IL

Sampled By: CJ Date: 10/31/2008
 Submitted By: CJ Date: 10/31/2008
 Tested By: DW Date: 11/5/2008

Project No.: 19081146 Date of Report: 11/5/2008
 Sample I.D. No. or Description: 5" minus re-screened

Aggregate Source: Clear Lake Sand & Gravel
Ipsen Road, Belvidere, IL
 Aggregate Type: Natural Stone

Reviewed By: Doug Waldeier
 Doug Waldeier

Sieve Analysis				
Sieve Size	X	Passing Retained	Specification	
	% Accumulative	Min.	Max.	
4-1/2"		100		
4"		99		
3"		95		
2-1/2"		89		
2"		70		
1-1/2"		31		
1"		13		
3/4"		11		
5/8"		10		
1/2"		9		
3/8"		8		
#4		7		
#8		6		
#10		6		
#16		6		
#30		5		
#40				
#50		3		
#80				
#100		2		
#200		1.8		

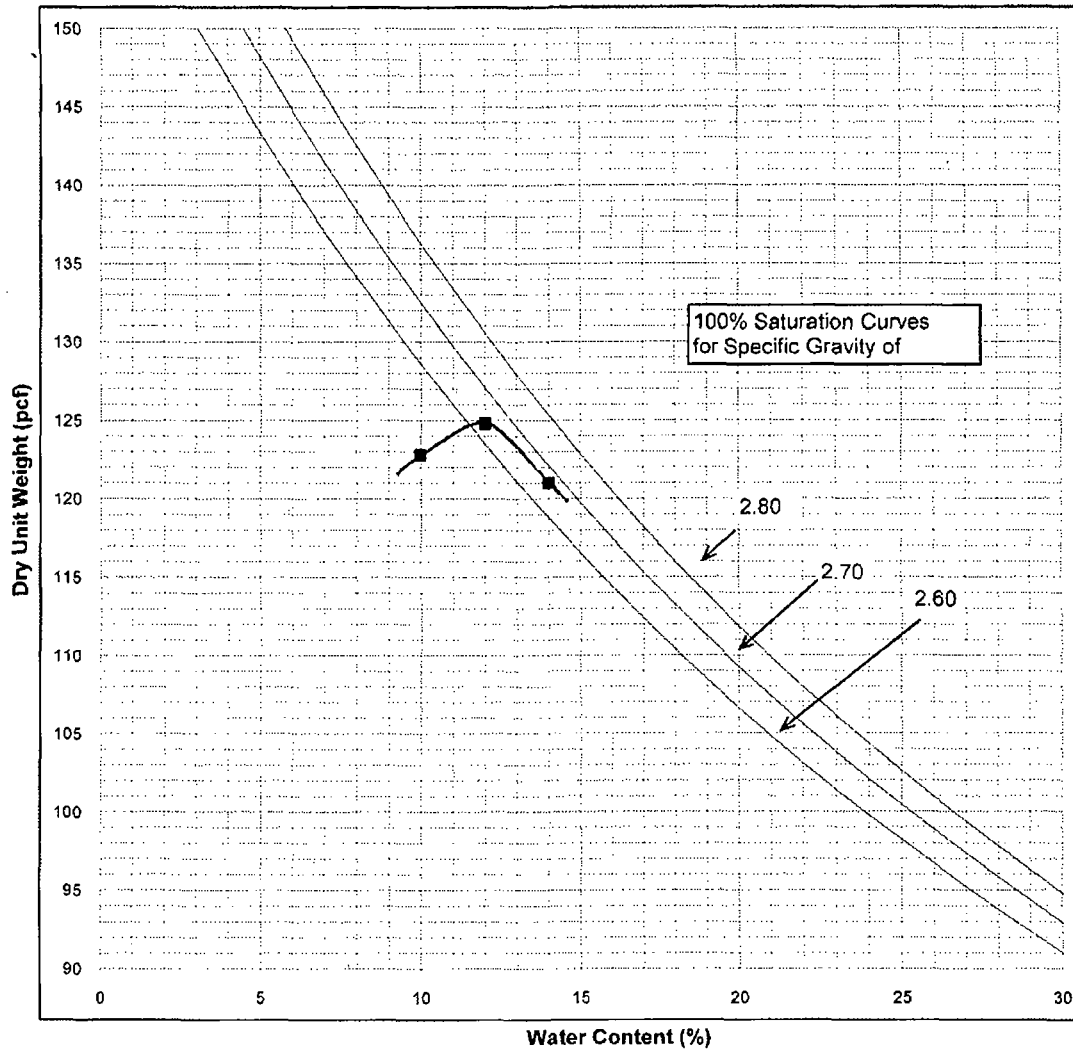
Test		Standard	Results	Specification
Fineness Modulus		C125		
Dry Rodded Unit Wt, pcf		C29		
Lightweight Pieces, %		C123		
Clay Lumps & Friable, %		C142		
Organic Impurities		C40		
Sand Equivalent Value		C2419		
LA Abrasion, %	Grade	C131		
Soundness-Mg, %loss		C88		
Soundness-Na, %loss		C88		
Fractured Face, % by Wt.				
One or more				
Two or more				
Liquid Limit		D4318		
Plasticity Index		D4318		
Chert, %		C123		
Shale - KDOT, %		KT-8		
Soft & Friable - KDOT, %		KT-9		
Moisture Content, %		D2216		
Specific Gravity	Absorption, %	C127/128		
	Bulk (Dry)	C127/128		
	Bulk (SSD)	C127/128		
	Apparent	C127/128		

Comments:

Copies to:

Proctor Test Results

TEST REPORT



Specimen No.		Maximum Dry Unit Weight, pcf		Optimum Water Content, %	
1		125.0		12.0	
Specimen Description					
Brown Lean Clay, Little Sand and Gravel					
Corrected Maximum Dry Unit Weight, pcf			Corrected Optimum Water Content, %		
n/a			n/a		
Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A		-	-	-	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	6.0	-	-	-

PROJECT: Terra P.O. 880

PROJECT NUMBER: C05194-10

LABORATORY COMPACTION TEST

CGC, Inc.

CHECKED BY:

BEF

REVIEWED BY:

KJS

2-Dec-08

Falling Head Permeability Test Results

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 2921 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT:

Terra P.O. 880

LOCATION:

Mig / Dewane Landfill

SAMPLE:

#1

DEPTH (ft):

SOIL DESCRIPTION:

Brown Lean Clay, Little Sand and Gravel

	<u>INITIAL</u>	<u>FINAL</u>
SAMPLE DIAMETER (cm)	10.16	10.16
SAMPLE LENGTH, (cm)	11.6	11.6
MOISTURE CONTENT, %	16	16.3
DRY DENSITY (lb/ft ³)	113.7	113.7
PERCENT COMPACTION	91	91

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	3.1E-08
2	1.8E-08
3	1.7E-08
4	1.7E-08
5	1.6E-08
6	1.7E-08

AVERAGE COEFFICIENT OF PERMEABILITY =

1.7E-08

cm/sec

(Based on run numbers 2 through 6)

FORMULA:

$$k = \frac{2.3 \cdot a \cdot L}{A \cdot t} \log_{10} \left(\frac{h_0}{h_1} \right)$$

Where A=cross-sectional area of sample, a=cross-sectional area of standpipe, t=time for water level to fall from initial height (h₀) to final height (h₁), and L=sample length.

REMARKS:

ASTM D5084 Modified /Remolded

BY:

KJS

DATE:

12/18/2008

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 2921 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT:

Terra P.O. 880

LOCATION:

Mig / Dewane Landfill

SAMPLE:

#1

DEPTH (ft):

SOIL DESCRIPTION:

Brown Lean Clay, Little Sand and Gravel

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	10.16	10.16
SAMPLE LENGTH, (cm)	11.6	11.6
MOISTURE CONTENT, %	15	15.3
DRY DENSITY (lb/ft ³)	113.7	113.7
PERCENT COMPACTION	91	91

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	1.5E-08
2	1.8E-08
3	1.6E-08
4	1.7E-08
5	1.6E-08
6	1.9E-08

AVERAGE COEFFICIENT OF PERMEABILITY = 1.7E-08 cm/sec
(Based on run numbers 2 through 6)

FORMULA:

$$k = \frac{2.3 \cdot a \cdot L}{A \cdot t} \log_{10} \left(\frac{h_0}{h_1} \right)$$

Where A=cross-sectional area of sample, a=cross-sectional area of standpipe, t=time for water level to fall from initial height (h₀) to final height (h₁), and L=sample length.

REMARKS:

ASTM D5084 Modified /Remolded

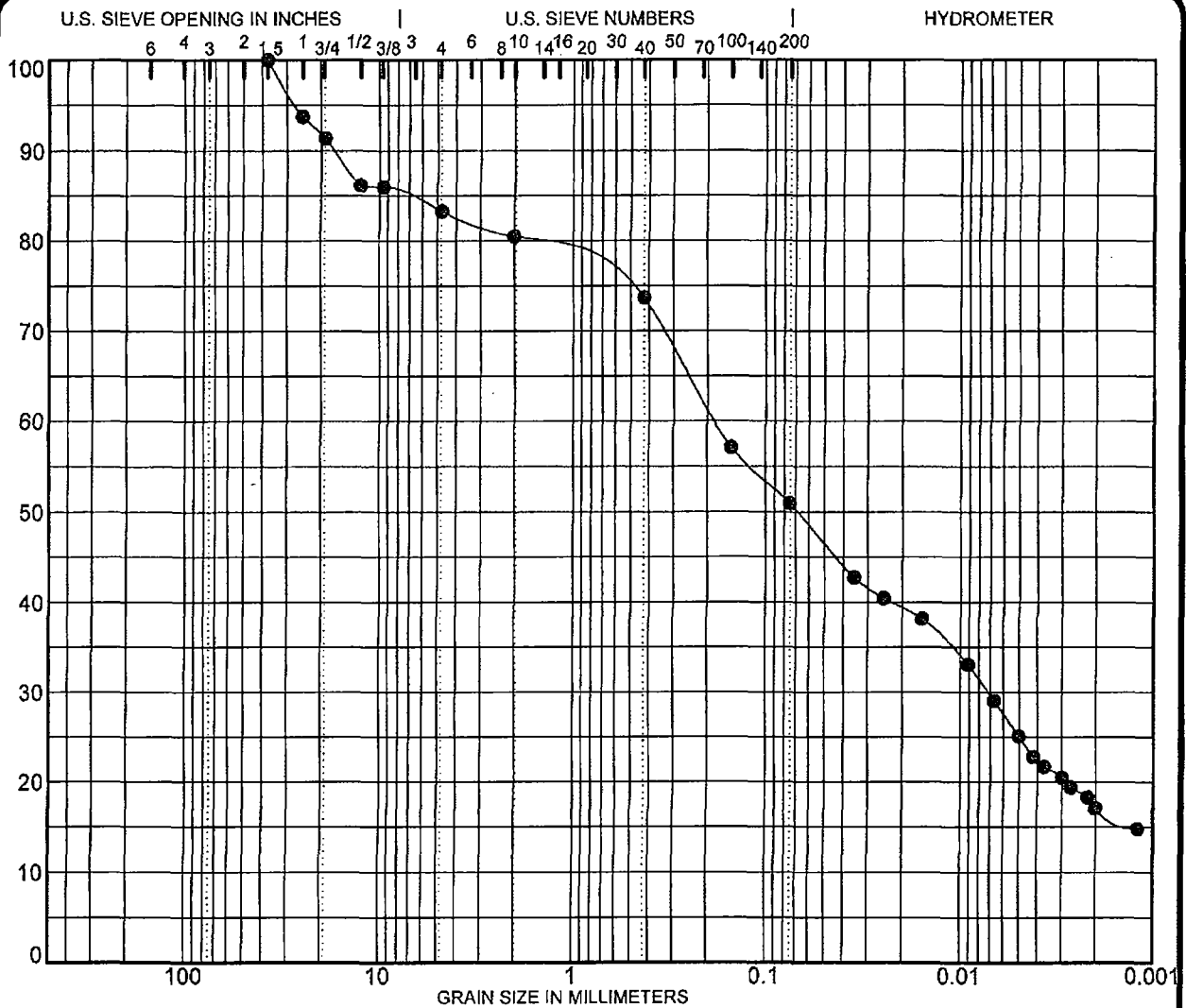
BY:

KJS

DATE:

12/18/2008

IDW Cover Soil Classification



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION				
Fill Material	2 inch	100	Pinkish-brown sandy lean CLAY with				
Delivered to TSC office on 12/3/2008	1 1/2	100	gravel (CL)				
	1	94					
	3/4	91	%GRAVEL	%SAND	%SILT	%CLAY	
NOTES:	1/2	86	17	32	26	25	
	3/8	86					
	# 4	83	γ _{dry} (pcf)	MC%	LL	PL	PI
	# 10	81			23	13	10
	# 40	74					
	# 100	57	Resistivity (ohm-cm)	SpGr	Bulk Density (pcf)	LOI (%)	
	# 200	51					

PROJECT MIG/DEWANE
 LOCATION Belvidere, Illinois

JOB NO. L-72,836
 DATE December 11, 2008

12-3

SOIL DATA SHEET
 Testing Service Corporation
 DeKalb, IL 60115

Field Density Measurements

APPENDIX D

Geosyntec's Daily Reports



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134 N. LaSalle Street
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312.658.0500

DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO: CHE8214 PHASE NO: 400 TASK NO: 404

DESCRIPTION: Well Installation Date: 11 November 2008

WEATHER: Cold and Raining, 35 °F.

Personnel on site:

BFINA (Owner): Eric Ballenger

Geosyntec (Owner's Representative): Burak Tanyu, Kristi Kern, John Seymour (Design Engineer)

CDM (IEPA's Oversight): Helen Haase, John Grabs, Matt Forkel

Terra Engineering and Construction (Contractor): John Karsten, David King, Steve Smith, Mark Rippe, Kurt Kleven;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: Track Hoe (963C), Forklift (TH220), Hauling Truck (250D), Drill Rig (AF10), Backhoe (690ELC), Dozer (D6H), 2 Trucks (one for Terra and one for JESMC), 4 Wheeler, Trailer (JESMC)

Activities:

0730 -- Arrive on-site and met with John Karsten (TEC)

0830 -- Burak T, John S. and Eric Ballenger arrive on-site.

0900 -- IEPA oversight arrived on-site.

0900 -- 0930 Preconstruction Meeting- The following is a summary of key points:

- Discussed the roles and responsibilities of all individuals on-site.
- Contractor is responsible for keeping a log of who enters and exits the site.
- The Contractor is also responsible for making sure the gate stays locked.
- The Contractor indicated that if they were having a hard time drilling, they would try for 45 minutes and then the Design Engineer (Geosyntec, J. Seymour) or his designee (Burak Tanyu) will be contacted for direction before they either abandon or install a modified well/vent, or abandon the hole.
- The Contractor discussed that the width of the waste trench would be at least 8 ft so that compaction equipment could be used for the cover soil when they close the trench.
- Contractor provided an overall plan of completing the work. They will work on the side slopes if weather is favorable and on the top cap if the weather is poor (wet, cool, causing soft soils).

0900 -- 1030 -- Delivery of aggregate for the wells, PVC Schedule 80 slotted pipes for wells, 1 portable toilet and Hole Plug bentonite bags arrive on-site.

1030 -- 1400 - Terra Engineering began excavating trench on top of landfill to place Investigation Derived Waste (IDW). The approximate location of the trench will be provided on a field sketch. The trench is approximately 8 ft wide, 9 ft deep and 40 ft long; it will be filled from the south to the north and the waste will receive 1 ft of daily cover at the end of the day.

1230 -- Geosyntec informed John Karsten of possible track out of site soils onto Logan Blvd. because of rainy weather and that a plan of adding stone to the access road to help knock off loose dirt or hiring a street sweeper may become necessary. John Karsten indicated that they would keep an eye on it but anticipated that little to no traffic would be coming on/off-site after tomorrow (November 12th).

1400-1440 -- Drilled GV-14 to a depth of 18' 8". Design depth was 18' and the vent casing was placed at the design depth and additional aggregate was used to fill in the space at the bottom of the borehole. The stratigraphy for this borehole consisted of approximately 2.5-foot thick cover clay soil and waste. No leachate was encountered during

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 9.5 hours

SHEET NO 1 OF 2



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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO: CHE8214 PHASE NO: 400 TASK NO: 404

DESCRIPTION: Well Installation Date: 11 November 2008

WEATHER: Cold and Raining, 35 °F.

drilling and constructing the vent. The health and safety monitoring was performed continuously during drilling and the results allowed the Contractor to downgrade from Level B to Level D after the drilling was completed. The waste was hauled to the IDW trench with a track hoe and truck after completion of the vent.

1440 – 1505 - Placement of pipe in GV-14 (12.5 ft solid, 13 ft perforated) occurred and placing of aggregate to 3 ft bgs occurred.

1505-1535 – Drilled GV-16 to a depth of 19'. Design depth was 18' and the pipe was placed at the design depth and additional aggregate was used to fill in the space at the bottom of the hole. The stratigraphy for this borehole consisted of approximately 3 feet thick cover clay soil and waste. No leachate was encountered during drilling and constructing the vent. Health and safety monitoring was performed as previously stated. A downgrade to Level D gear was allowed during construction of the vent. The waste from GV-14 was hauled to the IDW trench after completion of the vent.

1535 – The construction of GV-14 continued by placing a geocomposite “donut” above the aggregate and 3 ft thick bentonite seal above the geocomposite. Total of 24 bags of bentonite was used (8 bags and 32 gallons of water/1 ft lift)

1630 – Placement of stone in GV-16 occurred and IDW from GV-16 transported and placed into excavated trench. This was the last of the IDW for the day. Before leaving the Site, the Contractor placed approximately 1 ft of soil on top of the waste to serve as daily cover.

1630 – 1700 – End of 1st Day Meeting. Geosyntec met with the Contractor and IEPA oversight to discuss the progress made for the day.

Arrived on site: 0730

Left site: 1700

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PER: Kristi Kern

HRS: 9.5 hours

SHEET NO 2 OF 2

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 12 November 2008

WEATHER: Cold and Raining, 40 °F.

Personnel on site:

Geosyntec (Owner's Representative), Burak Tanyu, Kristi Kern

CDM (IEPA's Oversight): Helen Haase;

IEPA: Rick Lanham and Jay Timm;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: Track Hoe (963C), Forklift (TH220), Hauling Truck (250D), Drill Rig (AF10), Backhoe (690ELC), Dozer (D6H), 2 Trucks (one for Terra and one for JESMC), 4 Wheeler, Trailer (JESMC)

Activities:

0700 – Arrive on-site

0715 – Tailgate Meeting with all personnel on-site. Work is planned to stay on areas at the top of the landfill instead of the side slopes to minimize driving up and down the slopes. The health and safety topic of the day was “being careful of slips and falls due to the slippery site conditions”.

0740 – Contractor begin drilling at DP-12

0800 – 0925 Hit waste on DP-12 at approximately 10 ft BGS (10 ft thick clay layer) and hit moist waste at 20-22 ft BGS

0830 – 0900 Contractor graded surrounding surface by GV-14 by bulldozing surrounding material so vent and ground were flush. Placed 3 ft of bentonite Hole Plug in GV-16 with 24 bags (8 bags/lift) and 32 gallons/water per lift.

0900 – Contractor drilled to a depth of 44 ft BGS and the target depth was 45 ft. The drilling had to be stopped because at that depth the Contractor hit 1 ft of clay and then hit hard sand. The construction of the well started with placing a bottom seal made of a 1-ft-thick bentonite seal (i.e., 8 bags of bentonite Hole Plug), water for hydration, and some clay on top of the bentonite to replace the basal clay that has been drilled through. Therefore, the bottom of the borehole was established at 43 ft BGS instead of the designed depth of 45 ft BGS.

0925 – The Contractor placed 1 ft of aggregate above the Hole Plug bottom seal. The Contractor prepared the 8-inch diameter casing to be 14.5 ft long of solid pipe (i.e., 7.5 ft of the pipe was above the ground surface) and 35-ft long perforated pipe.

0940 – 1000 Placed pipe and some aggregate and continued placing aggregate in the hole to 5 ft BGS

0945 – 1000 Moved rig to DP-13 and started drilling DP-13. Contractor moved waste to the IDW trench while drilling the hole.

1015 – Started placing bentonite Hole Plug on DP-12

1130 – Completed drilling DP-13. The clay layer was 11 ft thick and moist waste was hit at 22 ft BGS.

1135 – Reached 52 ft; the design depth is 49.5 ft The Contractor agreed to build back the well to the design depth by placing aggregate to the design depth. It was confirmed with the Contractor that additional drilling is not the responsibility of the Owner.

1130 – 1330 IEPA arrived on-site (Rick Lanham and Jay Timm). During their visit, Geosyntec gave a tour of the Site and IEPA observed the construction. Before they left, Mr. Lanham asked about constructing a gravel road

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PER: Kristi Kern

HRS: 8.0 hours

SHEET NO 1 OF 1



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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 12 November 2008

WEATHER: Cold and Raining, 40 °F.

along the side slope from the entrance gate to the area at the top of the landfill. He also asked if the Contractor was going to bring a trailer to the Site for meetings.

1330 – Contractor placed pipe (14.5' solid, 41.5' perforated) in DP-13.

1335 – Contractor started to place aggregate in DP-13

1400 – Placed geocomposite in DP-13. Started placing bentonite hole plug in DP-13 at 5 ft BGS.

1410 – Finished placing bentonite Hole Plug in DP-13 and started placing daily cover over the waste in the trench

1415 – 1440 Finished covering waste in the trench with approximately 1 ft of daily cover.

1440 – 1500 Geosyntec met with the Contractor and compared the recorded pipe lengths and drilling depths for the GV-14, GV-16, DP-12, and DP-13. The quantities noted on the daily reports from November 11th and 12th are the agreed quantities. The Contractor informed Geosyntec about the suspension of work for the remainder of the week and potentially the following week due to slippery and wet site conditions.

1500 – Left site

Arrived on site: 0700

Left Site: 1500

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PER: Kristi Kern

HRS: 8.0 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 17 November 2008

WEATHER: Cold with some snow flurries, 30 °F.

Personnel on site:

Geosyntec (Owner's Representative) Kristi Kern

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King;

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), and CAT Roller Compactor (CA15)

Activities:

0700 – Arrive on-site

0700 – 1400 – Delivery of road fill (3/4" with fines) throughout the day to improve the road and parking lot/staging area (see photo #2008-11-18-03 on following page). Three semi-trucks were hauling fill.

0715 – 0720 – Talked to the Contractor about what they have planned for the day, which included upgrading the road and constructing a parking lot/staging area. Talked about where he was going to install the culvert west of the entrance. The Contractor informed Geosyntec that they had received additional aggregate and 6" dia. perforated pipe on Friday (11/14/2008) and had put pipes together for future vents.

0740 – Equipment delivered (Dozer – 550H and Roller Compactor – CA15)

0740 – 0810 – Moved aggregate to top of slope to make room for the parking lot/staging area

0820 – IEPA oversight (Helen Haase) arrived on-site.

0900 – 0940 – Stripped topsoil for parking lot/staging area and created stockpile directly east of the parking lot/staging area.

0910 – Placed 6" dia. corrugated metal pipe culvert west of the entrance.

0920 – 0940 – Compacted parking lot/staging area subgrade.

0945 – 1400 – Placed geotextile on parking lot/staging area.

1330 – John Karsten (Terra) arrived on-site

1345 – 1410 – Talked to John Karsten about Level B protection requirements and if they could start in Level D and upgrade to Level B instead of start in Level B and downgrade to Level D as they have been doing. I informed him that we have talked to our health and safety representative and have received affirmation that starting in Level B was required.

1430 – John Karsten left the site.

1440 – Contractor finished grading and compacting the road fill on the road and parking lot/staging area.

Approximately a 12 to 18" thick layer of road fill was added to both the road and parking lot/staging area. A total of 30 truck loads of fill were used to upgrade the road and parking lot/staging area.

1445 – Left the site.

Arrived on site: 0700

Left Site: 1445

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 7.75 hours

SHEET NO 1 OF 1

DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 17 November 2008

WEATHER: Cold with some snow flurries, 30 °F.

Location of Road and Parking Lot/Staging Area improvements

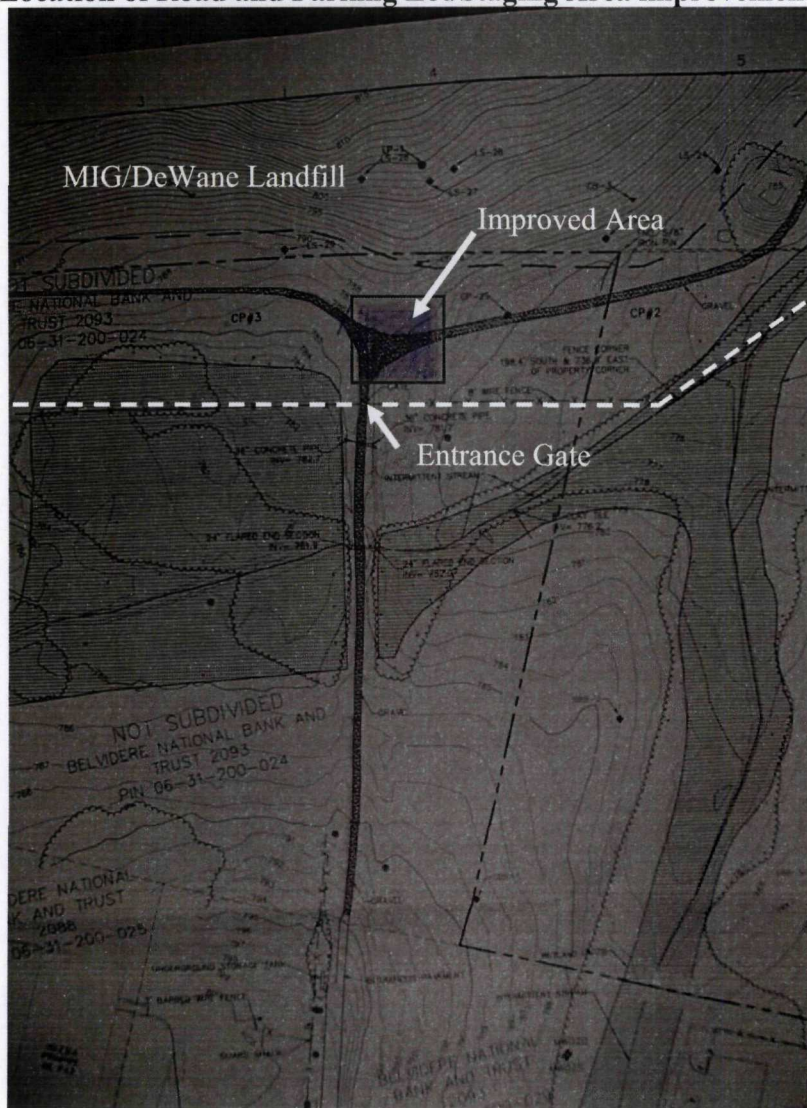


Photo #2008-11-18-03

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 18 November 2008

WEATHER: 19 °F - 35 °F Clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Mark Rippe (from 1340 - 1600);

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H)

Activities:

0630 – Arrive on-site

0700 – Tailgate Meeting with all personnel on-site. Discussed health and safety and reiterated that the driller must be in Level B protection when drilling is done as well as any laborer located within the exclusion zone. Discussed that if the track loader is entering the exclusion zone to haul waste to the trench while drilling is occurring, that he must first get an okay from Jim who is monitoring to determine that it is okay for him to enter if the operator is not in Level B PPE. The Contractor indicated that the drilling rig was “acting up” and that he needed it to warm up before drilling could start.

0755 – Contractor began drilling at DP-15

- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Clay cover was approximately 10.5 ft thick.
- Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. The track loader operator obtained okay from Jim before he entered exclusion zone.
- Pipe was assembled for the well and confirmed to be according to the design lengths (14.5' solid, 39' perforated)
- Leachate was not encountered, but waste was moist throughout the entire thickness of waste.

0915 – Completed drilling at DP-15 to a depth of 48' (design depth was 47'). Contractor agrees that additional drilling beyond the design depth is the responsibility of the Contractor.

0925 – 0935 – Placed pipe in DP-15.

0935 – 1050 – Placed aggregate in DP-15.

0950 – 1015 – Drilled GV-32

- Waste stockpile location was created south of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Clay cover was approximately 10.5-ft thick.
- Leachate was not encountered, but waste was moist throughout the entire thickness of waste.
- Drilled to a depth of 17.5' and design depth was 17'.

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PER: Kristi Kern

HRS: 10.25 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 18 November 2008

WEATHER: 19 °F - 35 °F Clear

1015 – 1040 – Unloaded semi truck load of pallets of bentonite Hole Plug. The Contractor did not have a forklift on-site, so the track loader and chains were used to unload the truck. This took away from drilling because all three workers were required to assist.

1050 – 1100 – Placed geocomposite in DP-15.

1100 – 1115 – Placed 6 ft thick layer of bentonite Hole Plug in DP-15. The laborer informed Geosyntec that he measured the depth below the bore hole cover grate as 5', but 40 bags of bentonite Hole Plug only came to approximately 1.5 ft below the surface, so 8 more bags were added. A total of 48 bags of bentonite Hole Plug were used. Placing 6 ft of bentonite was accepted because it was greater than the 5 ft required in the design.

1120 – 1125 – Hauled waste to trench from GV-32.

1125 – 1140 – Assembled the pipe for GV-32 and CQA confirmed lengths of pipe to be according to design (12.5' solid, 12' perforated).

1145 – Placed pipe in GV-32.

1145 – 1220 – Placed aggregate in GV-32.

1150 – Stripped topsoil for IDW placement for DP-11 just southeast of hole.

1215 – 1345 – Drilled DP-11.

- Waste stockpile location was created southeast of the well.
- Clay cover was approximately 10.5 ft thick.
- Waste was transported to the IDW trench while drilling was occurring. The track loader operator obtained okay from Jim before he entered exclusion zone.
- Pipe was assembled for the well and CQA confirmed lengths of pipe to be according to design (15.5' solid, 39.5' perforated). The Contractor determined that 15.5' solid pipe was required for this well, but the drawings indicated that only 14.5' was required. Geosyntec discussed with the Contractor and both agreed that only 14.5' was required after reviewing the drawings; however, this was after the pipe was placed. Geosyntec confirmed that the additional 1 ft was the Contractor's choice. The Design Engineer will be consulted to assess any effects on the design.
- From approximately 15' – 35' bgs, the waste was saturated
- From approximately 35' – 40' bgs, the waste was very moist
- From approximately 40' – 48' bgs, the waste was moist
- Drilled to a depth of 48' (47.5' was design depth).

1225 – Placed geocomposite on top of the gravel pack in GV-32.

1230 – 1240 – Placed 3-ft thick layer of bentonite Hole Plug in GV-32.

1350 – 1355 – Placed pipe in DP-11 (15.5' solid, 39.5' perforated).

1400 – 1415 – Placed aggregate in DP-11.

1410 – 1525 – Drilled DP-5.

- Waste stockpile location was created south of the well
- Clay cover was approximately 11 ft thick.
- Waste was transported to the IDW trench while drilling was occurring. The track loader operator obtained the okay from Jim before he entered exclusion zone.

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PER: Kristi Kern

HRS: 10.25 hours

SHEET NO 2 OF 1

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PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 18 November 2008

WEATHER: 19 °F - 35 °F Clear

- Pipe was assembled for the well and CQA confirmed the lengths to be according to design (14.5' solid, 38.5' perforated).
- Below clay cover the waste was consistently moist (no wet or dry zones).
- Drilled to a depth of 47' (46.5' was design depth).

1420 – Placed geocomposite in DP-11.

1420 – 1440 – Placed 5-ft thick bentonite Hole Plug in DP-11.

1530 – 1540 – Placed pipe in DP-5.

1540 – 1555 – Placed aggregate in DP-5.

1545 – 1630 – Covered waste in IDW trench with approximately 1-ft thick layer of daily cover.

1555 – Placed geocomposite in DP-5.

1600 – 1615 – Placed 5-ft thick bentonite Hole Plug in DP-5.

1635 – Confirmed depths of wells/vents with Steve.

1640 – CQA left the site.

Arrived on site: 0630

Left Site: 1640

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 10.25 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 19 November 2008

WEATHER: 30 °F - 35 °F Clear and Windy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H)

Activities:

0630 – Arrive on-site

0710 – Tailgate Meeting with all personnel on-site. Emphasized that the gate must be kept closed at all times. Reminded of proper lifting techniques. Reviewed the route to the hospital. Reiterated that the driller must be in Level B protection while drilling.

0720 – 0850 - Drilling of DP-10.

- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 36.5-ft long perforated pipe)
- The following was observed during drilling:
 - The thickness of clay cover was recorded to be approximately 10 ft thick.
 - Waste was moist from 10 ft to 25 ft bgs.
 - Waste was saturated from 25 ft to 35 ft bgs.
 - Waste was moist again from 35 ft to 45 ft bgs
- Completed drilling at DP-10 to a depth of 45 ft bgs (design depth was 44.5 ft). The additional drilling was completed at the prerogative of the Contractor.

0900 – 0910 – Placed casing in DP-10.

0910 – 0940 – Placed aggregate in DP-10.

0915 – 1030 – Drilled DP-7.

- Waste stockpile location was created south of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the casing that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 35.5-ft long perforated pipe)

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 10.75 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 19 November 2008

WEATHER: 30 °F - 35 °F Clear and Windy

- The following was observed during drilling:
 - The thickness of clay cover was recorded to be approximately 15 ft thick.
 - Waste was moist from 15 ft to 25 ft bgs.
 - Waste was saturated from 25 ft to 40 ft bgs.
 - Waste was moist from 40 ft to 45 ft bgs.
 - Completed drilling at DP-10 to a depth of 45 ft bgs (design depth was 43.5 ft). Contractor agrees that additional drilling beyond the design depth is the responsibility of the Contractor.
- 0940 – 0955 – Placed 5 ft thick bentonite Hole Plug in DP-10.
1035 – 1040 – Placed pipe in DP-07.
1040 – 1120 – Placed aggregate in DP-07.
1110 – 1340 – Drilled DP-02.
- Waste stockpile location was created northeast of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the casing that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5 ft-long solid pipe and 30.1-ft long perforated pipe)
 - The following was observed during drilling:
 - The thickness of clay cover was recorded to be approximately 5 ft thick.
 - At approximately 2 ft bgs, driller had a difficult time getting through (a big rock was found to be the problem), so the drill bit was changed to a hard drill bit at 1140 – 1200 and then changed back at 1210 – 1220
 - Waste was very wet and driller changed to liquids bucket at 1240 – 1250 and then changed back at 1315 – 1325
 - Waste was moist from 4 ft to 20 ft bgs.
 - Waste was saturated from 20 ft to 30 ft bgs.
 - Waste was moist from 30 ft to 38.1 ft bgs.
 - Drilled to a design depth of 38.1 ft bgs.
- 1215 – 1230 – Placed 5-ft thick bentonite Hole Plug in DP-70.
1345 – 1355 – Placed casing in DP-02.
1355 – 1435 – Placed aggregate in DP-02.
1420 – 1535 – Drilled DP-01.
- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the casing that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 27-ft long perforated pipe)

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 10.75 hours

SHEET NO 2 OF 1



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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 19 November 2008

WEATHER: 30 °F - 35 °F Clear and Windy

- The following was observed during drilling:
 - The thickness of clay cover was recorded to be approximately 7 ft thick bgs.
 - Waste was moist from 7 ft bgs to the drilled depth, no saturated or dry spots, consistently moist.
 - Drilled to a depth of 36 ft bgs (design depth of 35 ft bgs).

1445 – Placed geocomposite in DP-02.

1450 – 1520 – Placed 5 ft thick bentonite Hole plug in DP-02.

1550 – 1555 – Placed pipe in DP-01.

1600 – 1625 – Placed aggregate in DP-01.

1600 – 1710 – Covered waste in trench with approximately 1 ft thick of daily cover. Excavated north end of trench approximately 10 ft additional for tomorrow's IDW.

1635 – Placed geocomposite in DP-01.

1640 – 1650 – Placed 5 ft thick bentonite Hole plug in DP-01.

1715 – left the site

Arrived on site: 0630

Left Site: 1715

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PER: Kristi Kern

HRS: 10.75 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Greg Whittington, Chris Edsett (Maintenance Guy) (1400 - 1700);

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0710 – 0740 - Tailgate Meeting with all personnel on-site. A new laborer (Greg Whittington) arrived on-site to assist in the drilling activities. We reviewed the HASP and Greg signed the HASP. Went over the day's activities which would consist of drilling the gas vents along the slopes in the northwestern portion of the site. Reminded everyone to be careful because they are now getting used to the activities that are becoming routine, which is the time when people become complacent which can lead to accidents..

0800 – 0830 – Drilled GV-26.

- Waste stockpile location was created northwest of the vent (topsoil was stripped and stockpiled adjacent to the waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 12.5-ft long solid pipe and 9.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was consistently moist.
- Completed drilling at GV-26 to a depth of 15 ft bgs (design depth was 14.5 ft); over drilling was done at the Contractor's prerogative.

0850 – Placed pipe in GV-26.

0850 – 0905 – Placed aggregate in GV-26.

0900 – 0925 – Drilled GV-25.

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to the waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 12.5-ft long solid pipe and 8-ft long perforated pipe)

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

- The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was consistently moist until the bottom 3 ft, which were muddy.
 - Completed drilling at GV-25 to a depth of 13 ft bgs (design depth was 13 ft).
- 0925 – Placed geocomposite in GV-26.
0925 – 0935 – Placed 3 ft thick bentonite Holeplug in GV-26.
0925 – Placed pipe in GV-25.
0930 – 0950 – Placed aggregate in GV-25.
0940 – 1005 – Drilled GV-38.
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (12.5 ft long solid pipe and 10 ft perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 1.5 to 2 ft thick.
 - Waste was consistently moist.
 - Completed drilling at GV-26 to a depth of 15 ft bgs (design depth was 15 ft).
- 1010 – Placed pipe in GV-38.
1010 – 1050 – Placed aggregate in GV-38.
1020 – 1045 – Drilled GV-24.
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 11.5-ft long solid and 10.5-ft long perforated).
 - The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was consistently moist.
 - Completed drilling at GV-24 to a depth of 17 ft bgs (design depth was 15.5 ft); over drilling was done at the Contractor's prerogative.
- 1025 – 1035 – Placed 3 ft thick bentonite Holeplug in GV-25.
1050 – Placed geocomposite in GV-38
1110 – Placed pipe in GV-24.
1110 – 1115 – Placed 3 ft thick bentonite Holeplug in GV-38.
1115 – 1120 – Placed aggregate in GV-24.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

1120 – 1140 – Drilled GV-29

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 9-ft long perforated and 11.5-ft long solid).
- The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was consistently moist.
- Completed drilling at GV-29 to a depth of 15 ft bgs (design depth was 14 ft); over drilling was done at the Contractor's prerogative.

1125 – Placed geocomposite in GV-24.

1135 – 1140 – Placed 3 ft thick bentonite Holeplug in GV-24.

1145 – Placed pipe in GV-29.

1145 – 1155 – Placed aggregate in GV-29.

1155 – Placed geocomposite in GV-29.

1220 – 1225 – Placed 3 ft thick bentonite Holeplug in GV-29.

1225 – 1240 – Drilled GV-23

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 10.5-ft long perforated and 12.5-ft long solid).
- The following was observed during drilling:
 - Clay cover was approximately 2 ft thick.
 - Waste was consistently moist.
- Completed drilling at GV-23 to a depth of 16 ft bgs (design depth was 15.5 ft); over drilling was done at the Contractor's prerogative.

1245 – Placed pipe in GV-23.

1245 – 1300 – Placed aggregate in GV-23.

1255 – 1315 – Drilled GV-22

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 10.5-ft long perforated and 12.5-ft long solid).
 - The following was observed during drilling:
 - Clay cover was approximately 2 ft thick.
 - Waste was consistently moist.
 - Completed drilling at GV-26 to a depth of 16 ft bgs (design depth was 15.5 ft); over drilling was done at the Contractor's prerogative.
- 1300 – Placed gecomposite in GV-23.
1310 – 1340 – Placed 3 ft thick bentonite Holeplug in GV-23.
1320 – Placed pipe in GV-22.
1320 - 1335 – Placed aggregate in GV-22.
1330 – 1410 – Drilled GV-36
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 15 ft long solid pipe and 13 ft perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 6.5 ft thick.
 - Waste was consistently moist.
 - Drilled to depth of 21.5 ft and original design depth was 18 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 6.5 ft thick), the design depth was increased 3.5 ft to a depth of 21.5 ft. Therefore, Geosyntec directed the Contractor to drill 3.5 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 3.5 ft extra and used 3.5 ft long extra drilling and related materials..
- 1335 – Placed gecomposite in GV-22.
1340 - 1430 – Placed 3 ft thick bentonite Holeplug in GV-22.
1410 – Placed pipe in GV-36.
1410 – 1420 – Placed aggregate in GV-36.
1415 – 1435 – Chris Edsett (Terra rig maintenance employee) visited the Site to perform maintenance to the drilling rig.
1425 – Placed gecomposite in GV-36.
1430 - 1445 – Placed 3 ft thick bentonite Holeplug in GV-36.
1440 - 1515 – Drilled GV-35
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)

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HRS: 10.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

- Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 14.5 ft long solid pipe and 14.5 ft perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 6 ft thick.
 - Waste was consistently moist.
- Drilled to depth of 23 ft and original design depth was 19.5 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 6 ft thick), the design depth was increased 3 ft to a depth of 22.5 ft. Therefore, Geosyntec directed the Contractor to drill 3 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 3 ft extra and used 3 ft long extra drilling and related materials..

1520 – Placed pipe in GV-35.

1520 - 1530 – Placed aggregate in GV-35.

1525 - 1610 – Drilled GV-33

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 17.5 ft long solid pipe and 15 ft perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 9 ft thick.
 - Waste was consistently moist.
- Drilled to depth of 27 ft and original design depth was 20 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 9 ft thick), the design depth was increased 6 ft to a depth of 26 ft. Therefore, Geosyntec directed the Contractor to drill 7 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 7 ft extra and used 7 ft long extra drilling and related materials.

1530 – Placed geocomposite in GV-35.

1530 - 1540 – Placed 1 ft thick bentonite Holeplug in GV-35. The Contractor informed Geosyntec that they had run out of water, so they were only able to place 1 ft of bentonite Holeplug and unable to hydrate it. They plan on hydrating the 1 ft layer and then adding the additional 2 ft tomorrow.

1615 – Placed pipe in GV-33.

1615 - 1630 – Placed aggregate in GV-33.

1630 – Placed geocomposite in GV-33.

1635 - 1640 – Placed 1 ft thick bentonite Holeplug in GV-33. The Contractor informed Geosyntec that they had run out of water, so they were only able to place 1 ft of bentonite Holeplug and unable to hydrate it. They plan on hydrating the 1 ft layer and then adding the additional 2 ft tomorrow.

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PER: Kristi Kern

HRS: 10.5 hours

SHEET NO 5 OF 6



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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 20 November 2008

WEATHER: 30 °F Cloudy with some flurries

Arrived on site: 0630

Left Site: 1700

EXTRAS FOR THE DAY

- 12.5 feet additional drilling
- 12.5 feet long solid pipe
- 12.5 feet aggregate

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PER: Kristi Kern

HRS: 10.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 21 November 2008

WEATHER: 15 to 25°F, clear, wind up to 10 mph.

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern, Burak Tanyu (0800 – 1300), John Seymour (1000 – 1100);
CDM (IEPA's Oversight): Helen Haase;
Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Greg Whittington, John Karsten (1030 – 1100);
JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0700 – 0720 - Tailgate Meeting with all personnel on-site. Discussed being careful of slips, trips and falls on north side because of gullies that are hard to see. Discussed the day's planned activities. Contractor indicated that their plan for the day is to drill until around 1200 and then work on preparing the Site for the weekend.

0730 – 0755 – Drilled GV-21.

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 12.5-ft long solid pipe and 11.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was consistently moist.
- Completed drilling at GV-21 to a depth of 17 ft bgs (design depth was 16.5 ft). Extra drilling was completed at the Contractor's prerogative.

0730 – 08100 – Completed bentonite Holeplug in GV-35 and GV-33.

0800 – Placed pipe in GV-21.

0800 – 0840 – Placed aggregate in GV-21.

0840 – 1500 - Geosyntec measured leachate levels and methane gas concentrations in completed wells/vents. These readings have been tabulated.

0810 – 0950 – Drilled DP-16.

- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to the waste stockpile)
- Waste was transported to the existing IDW trench from last week (week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.

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HRS: 8.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 21 November 2008

WEATHER: 15 to 25°F, clear, wind up to 10 mph.

- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (8-in diameter, 14.5 ft long solid pipe and 25.5 ft perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 3.5 ft thick.
 - Waste was consistently moist from 3.5 ft to 20 ft bgs
 - Waste was saturated from approximately 20 ft to 35 ft bgs. Contractor had to switch to the liquids bucket from 0905 to 0950.
 - Completed drilling at DP-16 to a depth of 35 ft bgs (design depth was 33.5 ft). Extra drilling was completed at the Contractor's prerogative.
- 0840 – Placed geocomposite in GV-21.
0855 – 0915 – Placed 3 ft thick bentonite Holeplug in GV-21.
0950 – Placed pipe in DP-16.
0950 – 1010 – Placed aggregate in DP-16.
1000 – 1045 – Drilled GV-20.
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 12.5 ft long solid pipe and 13 ft perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was moist from 3 ft to 5 ft bgs.
 - Waste was saturated from 5 ft bgs to 19 ft bgs. Contractor had to switch to the liquids bucket from 1015 to 1030.
 - The Contractor built an additional berm around the area where waste is temporarily placed during drilling to have extra buffer zone to contain liquids from the waste.
 - Completed drilling at GV-20 to a depth of 19 ft bgs (design depth was 18 ft). Extra drilling was completed at the Contractor's prerogative.
- 1045 – Placed pipe in GV-20.
1045 – 1100 – Placed aggregate in GV-20.
1105 – 1125 – Drilled GV-19.
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from last week (Week ending 11/14) while drilling was occurring. Operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 12.5 ft solid and 8 ft perforated).

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HRS: 8.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 21 November 2008

WEATHER: 15 to 25°F, clear, wind up to 10 mph.

- The following was observed during drilling:
 - Clay cover was approximately 3.5 ft thick.
 - Waste was consistently moist.
- Completed drilling at GV-19 to a depth of 14 ft bgs (design depth was 13 ft). Since the clay cover soil was greater than 3 ft thick (i.e., 3.5 ft thick), the design depth was increased 1 ft to a depth of 14 ft. Therefore, Geosyntec directed the Contractor to drill 1 ft more than what was originally agreed. This increased depth was not added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 1 ft extra but did not use any extra solid pipe. The cost of this extra will be captured separately from the original scope of work.

1125 – 1145 - Placed pipe in GV-19 and started to place aggregate in GV-19. Aggregate was filled to 3 ft bgs and then geocomposite was placed. On top of the geocomposite, a 3 ft thick layer of bentonite Holeplug was placed.

1125 – Contractor indicated that they were done with drilling for the day.

1145 – 1445 – Contractor worked on preparing the Site for the weekend. This included covering the waste in the waste trench, and grading material around the wells/vents so the soil was evenly graded.

1445 – Contractor left the site.

Arrived on site: 0630

Left Site: 1500

EXTRAS FOR THE DAY

- 1 foot additional drilling
- 0 feet long solid pipe
- 1 ft of aggregate fill

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HRS: 8.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 24 November 2008

WEATHER: 30 to 40°F, snow flurries in the morning and clear in the afternoon .

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Greg Whittington, Mark Rippe (1200 – 1320);

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0700 – 0720 – Tailgate Meeting with all personnel on-site. Discussed being careful of slips, trips and falls due to the snowy conditions on-site. Discussed the day's planned activities. Contractor indicated that their plan for the day is to drill on the top of the landfill and work across the cover drilling both dual phase and gas vents.

0730 – 0900 – Drilled DP-9.

- Waste stockpile location was created south of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (8-in diameter, 14.5-ft long solid pipe, and 42.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 10 ft thick.
 - From 10 to 15 bgs there was black soil which appeared to be contaminated.
 - Waste was consistently moist from 15 to 51 ft bgs.
- Completed drilling at DP-9 to a depth of 51 ft bgs (design depth was 50.5 ft). Extra drilling was completed at the Contractor's prerogative.

0905 – 0910 – Placed pipe in DP-9.

0910 – 0940 – Placed aggregate in DP-9

0915 – Moved rig to DP-8.

0920 – 0930 – Changed air tank on drill rig.

0930 – 1055 – Drilled DP-8.

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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PER: Kristi Kern

HRS: 9.5 hours

SHEET NO 1 OF 1

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134 N. LaSalle Street
Suite 300
Chicago, Illinois 60602
312.658.0500

DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 24 November 2008

WEATHER: 30 to 40°F, snow flurries in the morning and clear in the afternoon.

- Geosyntec checked the length of the pipe that was assembled for the well and determined that the solid pipe length was 1 ft shorter than the designed length. A stick up height of 6.5 ft was determined to be acceptable for this well, thus ensuring the amount of solid pipe bgs would be according to design. The lengths of 8-in diameter pipe were 13.5-ft long solid pipe and 38-ft long perforated pipe.
 - The following was observed during drilling:
 - Clay cover was approximately 10 ft thick.
 - From 10 to 16 bgs there was black soil which appeared to be contaminated.
 - Waste was consistently moist from 16 to 47 ft bgs.
 - Completed drilling at DP-8 to a depth of 47 ft bgs (design depth was 46 ft). Extra drilling was completed at the Contractor's prerogative.
- 0940 – 0955 – Placed approximately 4.5 ft thick bentonite Holeplug® in DP-9. The Contractor overfilled the aggregate by approximately 0.5 ft, creating only a 4.5 ft bentonite seal instead of the designed thickness of 5 ft.
- 1100 – 1110 – Placed pipe in DP-8.
- 1110 – 1130 – Placed aggregate in DP-8.
- 1115 – Moved rig to GV-34.
- 1115 – 1235 - Drilled GV-34.
- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 22.5-ft long solid pipe, and 21-ft long perforated pipe).
 - The following was observed during drilling:
 - Clay cover was approximately 14 ft thick.
 - Waste was very moist from 14 to 20 ft bgs.
 - Waste was saturated from 20 to 25 ft bgs. Contractor had to change to liquids bucket from 1200 – 1215 because of the saturated waste.
 - Waste was very moist from 25 to 35 ft bgs.
 - Waste was moist from 35 to 37 ft bgs.
 - Drilled to depth of 37 ft and original design depth was 26 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 14 ft thick), the design depth was increased 11 ft to a depth of 37 ft. Therefore, Geosyntec directed the Contractor to drill 11 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 11 ft extra and used 11 ft long extra drilling and related materials.
- 1130 – Placed geocomposite in DP-8.
- 1130 – 1145 – Placed 5-ft thick bentonite Holeplug in DP-8.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 24 November 2008

WEATHER: 30 to 40°F, snow flurries in the morning and clear in the afternoon.

1135 – 1400 - Kurtis installed silt fence down gradient of disturbed areas. He had to stop before he was finished because the wet site conditions were causing the trenching equipment getting stuck. The trencher was not strong enough to operate in wet site conditions.

1235 – Placed pipe in GV-34.

1240 – 1335 – Placed aggregate in GV-34.

1310 - 1440 - Drilled GV-30.

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (6-in diameter, 15.5-ft long solid pipe, and 15.5-ft long perforated pipe).
- The following was observed during drilling:
 - Clay cover was approximately 7 ft thick.
 - Waste was very moist from 7 to 10 ft bgs.
 - Waste was saturated from 10 to 25 ft bgs. Contractor had to change to liquids bucket from 1355 – 1440 because of the saturated waste.
- Drilled to depth of 25 ft and original design depth was 20.5 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 7 ft thick), the design depth was increased 4 ft to a depth of 24.5 ft. Therefore, Geosyntec directed the Contractor to drill 4 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 4 ft extra and used 4 ft long extra drilling and related materials.

1335 – Placed geocomposite in GV-34.

1335 – 1345 – Placed 3-ft thick bentonite Holeplug in GV-34.

1440 – 1445 – Placed pipe in GV-30.

1440 – Contractor done drilling for the day.

1445 – 1500 – Placed aggregate in GV-30.

1500 – Placed geocomposite in GV-30.

1500 – 1510 – Placed 3-ft thick bentonite Holeplug in GV-30.

1500 – 1555 – Cleaned up the tracks on the equipment. Gathered the additional aggregate by the vents/wells drilled today and placed in the stockpile.

1600 – Left the site

Arrived on site: 0630

Left Site: 1600

EXTRAS FOR THE DAY

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 24 November 2008

WEATHER: 30 to 40°F, snow flurries in the morning and clear in the afternoon.

- 15 foot additional drilling
- 15 feet long solid pipe
- 15 ft of aggregate fill

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 25 November 2008

WEATHER: 30 to 40°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Greg Whittington;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0650 – 0710 – Tailgate Meeting with all personnel on-site. Discussed the planned activities for the day. Contractor indicated that he planned on working as many dual phase wells as possible and drilling any gas vents in between. The Contractor also indicated that tomorrow he planned on working until around 1430 and leaving early for the Thanksgiving Holiday.

0715 – 0815 – Drilled DP-6.

- Waste stockpile location was created east of well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 8-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 28.8-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 12 ft thick.
 - Waste was moist from 12 to 15 ft bgs.
 - Waste was very moist from 15 to 38 ft bgs.
- Completed drilling at DP-6 to a depth of 38 ft bgs (design depth was 36.8). Extra drilling was completed at the Contractor's prerogative.

0820 - Placed pipe in DP-6.

0825 - 0900 – Placed aggregate in DP-6

0830 - 0925 - Drilled GV-11.

- Waste stockpile location was created east of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (16.5-ft long solid pipe and 22-ft long perforated pipe).
- The following was observed during drilling:

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 25 November 2008

WEATHER: 30 to 40°F, clear

- Clay cover was approximately 8 ft thick.
 - Waste was moist from 8 to 32 ft bgs.
 - Drilled to depth of 32 ft and original design depth was 27 ft; however, since the clay cover soil was greater than 3 ft thick (i.e., 8 ft thick), the design depth was increased 5 ft to a depth of 32 ft. Therefore, Geosyntec directed the Contractor to drill 5 ft more than the design. This increased depth was also added to the solid pipe length. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 5 ft extra and used 5 ft long extra drilling and related materials.
- 0900 – Placed geocomposite in DP-6.
0900 – 0915 – Placed 5-ft thick bentonite Holeplug® in DP-6.
0940 – Placed pipe in GV-11.
0940 – 1010 – Placed aggregate in GV-11.
0955 – 1055 – Drilled DP-3.
- Waste stockpile location was created north of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 8-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 28.5-ft long perforated pipe).
 - The following was observed during drilling:
 - Clay cover was approximately 5 ft thick.
 - Waste was consistently moist from 5 to 36.5 ft bgs.
 - Completed drilling at DP-6 to a depth of 36.5 ft bgs (design depth was 36.5 ft).
- 1010 – Placed geocomposite in GV-11.
1015 – 1030 – Placed 3 ft thick bentonite Holeplug® in GV-11.
1100 – 1110 – Placed pipe in DP-3.
1110 – 1145 – Placed aggregate in DP-3.
1120 – 1250 – Drilled DP-17.
- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 8-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 28.5-ft long perforated pipe).
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was consistently moist from 3 to 15 ft bgs.
 - Waste was saturated from 15 to 25 ft bgs. Contractor changed to liquids bucket from 1200 – 1240 because of the saturated waste.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 25 November 2008

WEATHER: 30 to 40°F, clear

- Waste was very moist/wet from 25 to 37 ft bgs.
- Completed drilling at DP-17 to a depth of 37 ft bgs (design depth was 36.5 ft). Extra drilling was completed at the Contractor's prerogative.
- 1145 – Placed geocomposite in DP-3.
- 1145 – 1200 – Placed 5-ft thick bentonite Holeplug® in DP-3.
- 1300 – Placed pipe in DP-17.
- 1300 – 1325 – Placed aggregate in DP-17.
- 1330 – Placed geocomposite in DP-17.
- 1330 – 1345 – Placed 5-ft thick bentonite Holeplug® in DP-17.
- 1330 – 1400 – Drilled GV-31.
- Waste stockpile location was created south of the vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (16-ft long solid pipe and 15.5-ft long perforated pipe).
- The following was observed during drilling:
 - Clay cover was approximately 10 ft thick.
 - Waste was moist from 10 to 15 ft bgs and again from 20 to 25 ft bgs.
 - Waste was very moist/wet from 15 to 20 ft bgs.
- Drilled to depth of 25 ft and original design depth was 18 ft; however, because the clay cover soil was greater than 3 ft thick (i.e., 10 ft thick), the design depth was increased by 7 ft to a depth of 25 ft. Therefore, Geosyntec directed the Contractor to drill 7 ft more than the design. This increased depth was also added to the solid pipe length. However, the Contractor requested to use some perforated pipe since they had extra perforated pipe on-site. Geosyntec said that was okay as long as both parties agreed that the Contractor could not charge for the extra pipe at the solid pipe rate and not the perforated pipe rate. Contractor agreed with this approach and Geosyntec confirmed that the length of the solid pipe was consistent with design. At the end of the day, Geosyntec and the Contractor compared notes and it was agreed that the Contractor drilled 7 ft extra and used 7 ft long extra drilling and related materials.
- 1410 – Placed pipe in GV-31.
- 1410 – 1425 – Placed aggregate in GV-31.
- 1435 – Placed geocomposite in GV-31.
- 1435 – 1510 – Placed 3-ft thick bentonite Holeplug®.
- 1415 – 1435 – Drilled GV-18.
- Waste stockpile location was created south of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 25 November 2008

WEATHER: 30 to 40°F, clear

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 10.5-ft long perforated pipe).
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was consistently moist from 3 to 15.5 ft bgs.
 - Completed drilling at GV-18 to a depth of 15.5 ft bgs (design depth was 15.5 ft).
- 1440 – Placed pipe in GV-18.
1440 – 1455 – Placed aggregate in GV-18.
1455 – Placed geocomposite in GV-18.
1515 – 1520 – Contractor placed 2-ft thick layer of bentonite in GV-18 as opposed to 3-ft because they placed 1-ft extra aggregate in the hole. The Contractor agreed that this was their mistake but they were unable to excavate the additional aggregate with the equipment available on-site.
1450 – 1505 – Drilled GV-17.
- Waste stockpile location was created east of the well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and determined that the perforated length was 6 inches shorter and the solid length was one foot longer than design (12.5-ft long solid pipe and 6.5-ft long perforated pipe).
 - The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was consistently moist from 2.5 to 12 ft bgs.
 - Completed drilling at GV-17 to a depth of 12 ft bgs (design depth was 12 ft).
- 1510 – Placed pipe in GV-17
1515 – 1525 – Placed aggregate in GV-17.
1525 – Placed geocomposite in GV-17.
1525 – 1530 – Placed 3-ft thick bentonite Holeplug in GV-17
1530 – 1600 – Covered waste in IDW trench with approximately 1-ft thick layer of daily cover.
1600 – Left the site

Arrived on site: 0630

Left Site: 1600

EXTRAS FOR THE DAY

- 12 foot additional drilling
- 12 feet long solid pipe
- 12 ft of aggregate fill

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 26 November 2008

WEATHER: 30 to 40°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, John Karsten (;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0700 – 0710 - Tailgate Meeting with all personnel on-site. Discussed the planned activities for the day. Contractor indicated that he planned on working the gas vents near the toe of the slope on the southern portion of the landfill. The Contractor also indicated that he only planned to complete 4 to 5 vents today and then complete erosion control measures.

0725 – 0805 – Drilled GV-15.

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was moist from 2.5 to 10 ft bgs.
 - Waste was saturated from 10 to 13 ft bgs. Contractor changed to liquids bucket from 0750 – 0805 because of the saturated waste.
- Completed drilling at GV-15 to a depth of 13 ft bgs (design depth was 13).

0805 – Placed pipe in GV-15.

0805 – 0815 – Placed aggregate in GV-15.

0825 – Placed geocomposite in GV-15.

0825 – 0840 – Placed 3-ft thick bentonite Holeplug® in GV-15.

0825 – 0850 – Drilled GV-27.

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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HRS: 7.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 26 November 2008

WEATHER: 30 to 40°F, clear

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3.5 ft thick.
 - Waste was moist from 3.5 to 11 ft bgs.
 - Waste was saturated from 11 to 13 ft bgs.
 - Contractor stopped drilling when he reached clay at 13 ft bgs.
- Completed drilling at GV-27 to a depth of 13 ft bgs (design depth was 17). The design depth was not reached because the Contractor reached clay. The pipe length was changed from 12-ft long perforated pipe to 8-ft long perforated pipe because of the change in depth.

0915 – Placed pipe in GV-27.

0915 – 0925 – Placed aggregate in GV-27.

0935 – Placed geocomposite in GV-27.

0935 – 0945 – Placed 3-ft thick bentonite Holeplug® in GV-27.

0935 – 0950 – Drilled GV-41.

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- The Contractor indicated that they did not have the pipe for GV-41 made and did not have enough pipe to make it. The Contractor used the 6-in diameter pipe that was assembled for GV-2 (11.5-ft long solid pipe and 8-ft long perforated pipe).
- The following was observed during drilling:
 - Clay cover was approximately 4 ft thick.
 - Waste was moist from 4 to 13.5 ft bgs.
- Completed drilling at GV-41 to a depth of 13.5 ft bgs (design depth was 13.5).

1000 – Placed pipe in GV-41.

1000 - 1010 – Placed aggregate in GV-41.

1020 – Placed geocomposite in GV-41.

1045 - 1055 – Placed 3-ft thick bentonite Holeplug® in GV-41.

1010 - 1035 – Drilled GV-08.

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 10.5-ft long perforated pipe).
- The following was observed during drilling:

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 26 November 2008

WEATHER: 30 to 40°F, clear

- Clay cover was approximately 3.5 ft thick.
- Waste was moist from 3.5 to 15.5 ft bgs.
- Completed drilling at GV-08 to a depth of 15.5 ft bgs (design depth was 15.5).
- 1045 – Placed pipe in GV-08.
- 1045 - 1105 – Placed aggregate in GV-08.
- 1105 – Placed geocomposite in GV-08.
- 1105 - 1115 – Placed 3-ft thick bentonite Holeplug® in GV-08.
- 1055 – 1115 – Drilled GV-40.
- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- The Contractor indicated that they did not have the pipe for GV-40 made and did not have enough pipe to make it. The Contractor used the 6-in diameter pipe that was assembled for GV-1 (12.5-ft long solid pipe and 8.5-ft long perforated pipe).
- The following was observed during drilling:
 - Clay cover was approximately 3.5 ft thick.
 - Waste was moist from 3.5 to 13.5 ft bgs.
- Completed drilling at GV-40 to a depth of 13.5 ft bgs (design depth was 13.5).
- 1130 – Placed pipe in GV-40.
- 1130 - 1135 – Placed aggregate in GV-40.
- 1135 – Placed geocomposite in GV-40.
- 1140 - 1200 – Placed 3-ft thick bentonite Holeplug® in GV-40.
- 1115 – Contractor was done drilling.
- 1200 – 1400 – Geosyntec took water level readings on installed vents/wells to obtain the leachate level in the wells/vents.
- 1200 – 1400 – Contractor, constructed a diversion berm near the bottom of the access ramp along the southern slope of the landfill near parking lot/staging area and installed a silt fence at the outlet of the diversion berm, and cleaned up around installed wells/vents.
- 1400 – Left the site.

Arrived on site: 0630

Left Site: 1400

EXTRAS FOR THE DAY

- No extras for today

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HRS: 7.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 1 December 2008

WEATHER: 15 to 20°F, snow and cloudy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern (1300 – 1620), John Seymour (0630 – 1330);

CDM (IEPA's Oversight): Matt Forkel;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, John Karsten, Greg Whittington;

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0730 - Tailgate Meeting with all personnel on-site. Discussed the day's planned activities. Contractor indicated that he planned on working the gas vents near the toe of the slope on the western portion of the landfill. Safety moment: watch for slippery surfaces due to the snow.

0750 - 0815 – Drilled GV-7.

- Waste stockpile location was created east of vent (topsoil was first stripped and stockpiled south/downslope of waste stockpile area)
- Waste was transported to the existing IDW trench from two weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 11-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was moist from 2.5 to 16 ft bgs.
- Completed drilling at GV-7 to a depth of 16 ft bgs (design depth was 16).

0825 – Placed pipe in GV-7 with 7.5 ft stickup. Placed aggregate in GV-7 to approx. 3 ft from surface. Placed geocomposite in GV-7. Only 1 ft of bentonite Holeplug was placed and not hydrated because water was not available to hydrate the bentonite; the remaining bentonite will be placed at a later time after water is available.

0830 - 0855 – Drilled GV-39.

- The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was moist from 2.5 to 10 ft bgs.
 - Waste was wet from 10 to 13.5 ft bgs.
- Completed drilling at GV-39 to a depth of 13.5 ft bgs (design depth was 13.5).
- Placed pipe in GV-39 in afternoon because pipe was not assembled in the morning. A pallet of Holeplug was placed over the top of the borehole until the pipe was assembled and ready to be placed. Geosyntec

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 3.3 hours

SHEET NO 1 OF 1

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 1 December 2008

WEATHER: 15 to 20°F, snow and cloudy

checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8.5-ft long perforated pipe).

- Placed aggregate in GV-39 in the afternoon.
- Placed geocomposite in GV-39 in the afternoon.
- Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.

0900 – 0925 – Drilled GV-6.

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 10.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 2.5 ft thick.
 - Waste was moist from 2.5 to 5 ft bgs.
 - Waste was wet from 5 to 15.5 ft bgs.
- Completed drilling at GV-6 to a depth of 15.5 ft bgs (design depth was 15.5).

0930 - Placed pipe in GV-6.

- Placed aggregate in GV-6.
- Placed geocomposite in GV-6.
- Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.

0940 – 1000 - Drilled GV-28.

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 4-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was dry from 3 to 9 ft bgs.
- Completed drilling at GV-28 to a depth of 9 ft bgs (design depth was 9 ft).

1001- Placed pipe in GV-28.

1006 - Placed aggregate in GV-28.

- Placed geocomposite in GV-28.
- Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.

1010 – 1040 – Drilled GV-5.

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 7-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was dry from 3 to 5 ft bgs.
 - Waste was moist from 5 to 12 ft bgs.
- Completed drilling at GV-5 to a depth of 12 ft bgs (design depth was 12).

1040 - Placed pipe in GV-5.

- Placed aggregate in GV-5.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 1 December 2008

WEATHER: 15 to 20°F, snow and cloudy

- Placed geocomposite in GV-5.
- Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1050 – 1120 – Drilled GV-4.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8-ft long perforated pipe); however, the top foot of solid pipe was removed to locate the perforations at the design depth.
 - The following was observed during drilling:
 - Clay cover was approximately 4 ft thick.
 - Waste was moist from 2 to 13 ft bgs.
 - Completed drilling at GV-4 to a depth of 13 ft bgs (design depth was 13).
- 1120 – Placed pipe in GV-4.
 - Placed aggregate in GV-4.
 - Placed geocomposite in GV-4.
 - Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1130 – 1215 – Drilled GV-3.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8-ft long perforated pipe); however, the top foot of solid pipe was removed to locate the perforations at the design depth.
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was moist from 3 to 14 ft bgs.
 - Completed drilling at GV-3 to a depth of 14 ft bgs (design depth was 13). Additional drilling beyond the design depth was done at the Contractor's prerogative.
 - Placed pipe in GV-3.
 - Placed aggregate in GV-3.
 - Placed geocomposite in GV-3.
 - Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1225 – 1255 – Drilled GV-2.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 8-ft long perforated pipe); however, the top foot of solid pipe was removed to locate the perforations at the design depth.
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was moist from 3 to 13 ft bgs.
 - Completed drilling at GV-2 to a depth of 13 ft bgs (design depth was 13).
 - Placed pipe in GV-2.
 - Placed aggregate in GV-2.
 - Placed geocomposite in GV-2.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 1 December 2008

WEATHER: 15 to 20°F, snow and cloudy

- Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1310 – 1340 – Drilled GV-1.
 - Waste stockpile location was created south of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 9-ft long perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was wet from 3 to 5 ft bgs.
 - Waste was moist from 4 to 14 ft bgs.
 - Completed drilling at GV-1 to a depth of 14 ft bgs (design depth was 14).
- 1342 - Placed pipe in GV-1.
 - Placed aggregate in GV-1.
 - Placed geocomposite in GV-1.
 - Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1410 – 1445 – Drilled GV-9.
 - Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 15.5-ft long perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 9 ft thick.
 - Waste was moist from 5 to 20 ft bgs.
 - Waste was wet from 20 to 23 ft bgs.
 - Completed drilling at GV-9 to a depth of 23 ft bgs (design depth was 20.5). Additional drilling was done at the Contractor's prerogative. The thickness of the cover was greater than 3 ft; however, no additional drilling was requested because the waste was becoming saturated and additional gas venting would not be achieved.
 - Placed pipe in GV-9.
 - Placed aggregate in GV-9.
 - Placed geocomposite in GV-9.
 - Bentonite Holeplug was not placed because water was not available to hydrate the bentonite.
- 1500 – 1620 – Cleaned up the site.
- 1620 – Left the site.

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 1 December 2008

WEATHER: 15 to 20°F, snow and cloudy

Arrived on site: 0630 (John); 1300 (Kristi)

Left Site: 1330 (John); 1620 (Kristi)

EXTRAS FOR THE DAY

- No extras for today

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 2 December 2008

WEATHER: 15 to 20°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, John Karsten (0900 – 1000),
Greg Whittington, Chris Edsett (1200 -);

JESMC (Contractor's Level B Subcontractor): Jim Meldrum

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), CAT Dozer (D6H), Ford and Chevy Trucks (one for Terra and one for JESMC), Honda 4 Wheeler, Trailer (JESMC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0650 - 0710 - Tailgate Meeting with all personnel on-site. Discussed the day's planned activities. Contractor indicated that he planned on finishing the 4 gas vents and 2 dual phase wells. After drilling is completing they would start cleaning up the site and get ready to install the vents.

0715 - 0805 – Drilled DP-4.

- Waste stockpile location was created southeast of well (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 8-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 23.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 3.5 ft thick.
 - Waste was moist from 3.5 to 10 ft bgs.
 - Waste was wet from 10 to 33 ft bgs.
- Completed drilling at DP-4 to a depth of 33 ft bgs (design depth was 31.5). Additional drilling was done at the Contractor's prerogative.

0815 – Placed pipe in DP-4.

0820 – 0850 – Placed aggregate in DP-4.

0850 – Placed geocomposite in DP-4.

0855 – Placed 5-ft thick bentonite Holeplug in DP-4.

0835 – 0905 – Drilled GV-37

- Waste stockpile location was created north of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 2 December 2008

WEATHER: 15 to 20°F, clear

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 15.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 11.5 ft thick.
 - Waste was moist from 11.5 to 15 ft bgs.
 - Waste was wet from 15 to 21 ft bgs.
- Completed drilling at GV-37 to a depth of 21 ft bgs (design depth was 20.5). Additional drilling was done at the Contractor's prerogative. The thickness of the cover was greater than 3 ft; however, no additional drilling was requested because the waste was becoming saturated and additional gas venting would not be achieved.

0915 – Placed pipe in GV-37

0915 – 1005 – Placed aggregate in GV-37.

1005 – Placed geocomposite in GV-37.

1005 – 1025 – Placed 3-ft thick bentonite Holeplug in GV-37.

0940 – 1005 – Drilled GV-10

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 15.5-ft long perforated pipe)
- The following was observed during drilling:
 - Clay cover was approximately 11 ft thick.
 - Waste was moist from 11 to 17.5 ft bgs.
 - Waste was wet from 17.5 to 23 ft bgs.
- Completed drilling at GV-10 to a depth of 23 ft bgs (design depth was 20.5). Additional drilling was done at the Contractor's prerogative. The thickness of the cover was greater than 3 ft; however, no additional drilling was requested because the waste was becoming saturated and additional gas venting would not be achieved.

1010 – Placed pipe in GV-10.

1010 – 1040 – Placed aggregate in GV-10.

1040 – Placed geocomposite in GV-10.

1040 – 1120 – Placed 3-ft thick bentonite Holeplug in GV-10.

1020 – 1050 – Drilled GV-12.

- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
- Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.

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HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 2 December 2008

WEATHER: 15 to 20°F, clear

- Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 14-ft long perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 3 ft thick.
 - Waste was moist from 3 to 21 ft bgs.
 - Completed drilling at GV-12 to a depth of 21 ft bgs (design depth was 19). Additional drilling was done at the Contractor's prerogative.
- 1055 – Placed pipe in GV-12.
1055 – 1150 – Placed aggregate in GV-12.
1150 – Placed geocomposite in GV-12.
1150 -- Placed 3-ft thick bentonite Holeplug in GV-12.
1105 – 1130 – Drilled GV-13.
- Waste stockpile location was created east of vent (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 6-in diameter pipe that was assembled for the vent and confirmed that the lengths were according to the design lengths (11.5-ft long solid pipe and 13-ft long perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 2 ft thick.
 - Waste was moist from 2 to 19 ft bgs.
 - Completed drilling at GV-13 to a depth of 19 ft bgs (design depth was 18). Additional drilling was done at the Contractor's prerogative.
- 1135 – Placed pipe in GV-13.
1135 – 1200 – Placed aggregate in GV-13.
1200 - Placed geocomposite in GV-13.
1250 – 1305 - Placed 3-ft thick bentonite Holeplug in GV-13.
1145 - 1400 - Drilled DP-14.
- Waste stockpile location was created east of well (topsoil was stripped and stockpiled adjacent to waste stockpile)
 - Waste was transported to the existing IDW trench from three weeks ago (week ending 11/14) while drilling was occurring. Track loader operator obtained okay from Jim before he entered exclusion zone.
 - Geosyntec checked the length of the 8-in diameter pipe that was assembled for the well and confirmed that the lengths were according to the design lengths (14.5-ft long solid pipe and 23.5-ft long perforated pipe)
 - The following was observed during drilling:
 - Clay cover was approximately 9 ft thick.
 - Waste was moist from 9 to 15 ft bgs.
 - Waste was saturated from 15 to 35 ft bgs.

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HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 2 December 2008

WEATHER: 15 to 20°F, clear

- Waste was wet from 35 to 43 ft bgs.
 - Completed drilling at DP-14 to a depth of 43 ft bgs (design depth was 42.5). Additional drilling was done at the Contractor's prerogative.
- 1405 - Placed pipe in DP-14.
1410 – 1430 - Placed aggregate in DP-14.
1430 - Placed geocomposite in DP-14.
1540 – 1550 - Placed 5-ft thick bentonite Holeplug in DP14.
1430 – 1540 – Placed bentonite Holeplug in vents that were installed on 12/1/2008 (GV-1, GV-2, GV-3, GV-4, GV-5, GV-6, GV-7, GV-9, GV28, GV-39).
1430 – 1600 – Covered waste in IDW trench with one foot of daily cover.
1630 – Left the site

Arrived on site: 0630

Left Site: 1630

EXTRAS FOR THE DAY

- No extras for today

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 3 December 2008

WEATHER: 25 to 35°F, cloudy and heavy snow

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Steve Smith, Kurt Kleven, David King, Greg Whittington;

Equipment: CAT Track Loader (963C), John Deere Hauling Truck (250D), IMT Drill Rig (AF10), John Deere Backhoe (690ELC), Chevy Truck, John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250

Activities:

0630 – Arrive on-site

0700 – Tailgate Meeting with all personnel on-site. Discussed the day's planned activities. Contractor indicated that he planned on decontaminating the drill rig, track loader, backhoe and off-road truck. He also indicated that they would clean up around the wells/vents.

0710 – 0730 – Used shovels to clean the drill rig buckets of large debris.

0740 – 1200 – The Contractor utilized the area that is adjacent to and east of the IDW trench for decontamination. To create an area where the water used for decontamination is confined, the Contractor constructed berms around the selected area. The extent of the area was approximately 20 ft by 20 ft. Additionally, they placed plastic over the berm and the ground to create a liner to contain the decontamination water from the ground. The Contractors used power washing equipment and mixed water and Carbo Clean (manufactured by Logo Midwest). After power washing the equipment, the decontamination water was pumped into a water wagon and taken to the existing contaminated pond on the eastern side of the site. The water was discharged into this pond. The following were power washed: buckets (3), drill bit, off-road truck bucket, track loader bucket, drill rig, backhoe bucket, tracks on trackloader.

0950 – Drill rig left the site.

1100 – 1230 – Cleaned up garbage (i.e., stray bentonite bags and 55-gallon drums) around the site and placed in the IDW trench.

1230 – 1500 – Cleaned up around the installed wells/vents by grading the disturbed soils to get ready to stabilize.

1305 – Off-road truck left the site as well as Steve Smith.

1335 – Greg Whittington and Kurt Kleven left the site.

1500 – Left the site

1530 – Dropped off soil sample (taken from clay stockpile) at laboratory (Testing Services Corporation) for soil testing (sieve analyses including hydrometer, Atterberg limit tests, and Unified Soil Classification).

Arrived on site: 0630

Left Site: 1500

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HRS: 8.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 4 December 2008

WEATHER: 5 - 15°F, clear turning cloudy in the afternoon

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Kurt Kleven, David King; John Karsten

Test Services Corporation (Subcontractor for Testing): Teresa Lorenz

Equipment: CAT Track Loader (963C), John Deere Backhoe (690ELC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250, CAT 563C Pad foot compactor

Activities:

0700 – Arrive on-site

0710 – 0730 – Plowed entrance road

0730 – 0750 – Fueled equipment

0800 – Brief Tailgate Meeting with all personnel on-site. Discussed the day's planned activities. Contractor indicated that he planned on constructing the cover over the IDW trench.

0810 – 0815 – The Contractor utilized the clay soil that was excavated to create the IDW trench and constructed berms for the decontamination pad.

0815 – 0830 – Prepped the IDW trench for cover placement by removing the frozen daily cover soil and ice/snow from the IDW trench and clay stockpile and placing frozen materials adjacent to the trench.

0930 – Track loader left the site.

0930 – 0945 – John Karsten visited the site.

1000 – Started construction of cover over IDW trench. The Contractor first constructed 1-foot-thick what is called "bridge" lift over the waste to create a working platform and then started to construct cover soil above this platform with 10 inch lifts.

1245 – Started installing turbines on dual phase wells.

1300 – Talked to John Karsten about laboratory test results and got a verbal response on the Standard Proctor test values. Maximum dry density determined by the Standard Proctor test was 125 pcf and the optimum moisture content was 12%. The Contractor will provide the official test results before the completion of the project.

1515 – The Contractor finished constructing the cover system for the day. Contractor dug down to each lift (10 inches for second lift and 20 inches for first lift) for density testing.

1525 – Density testing is performed by Teresa Lorenz from Test Services Corporation with a Troxler nuclear density gauge. The target relative compaction was 95% or more (i.e., ≥ 118.75 pcf) and the moisture content was optimum to 3% wet of optimum moisture content (i.e., 12 – 15%). The results obtained from the density test are summarized below:

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 4 December 2008

WEATHER: 5 - 15°F, clear turning cloudy in the afternoon

Lift	Depth of Measurement	Percent of Maximum Density	Dry Density (pcf)	Moisture Content
1 st	10 inches	96.4%	120.5	13.1%
2 nd	12 inches	97.2%	121.5	12.8%
3 rd	12 inches	98.7%	123.4	12.1%

All of these values satisfied the compaction requirement.

1600 – Left the site

Arrived on site: 0700

Left Site: 1600

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 5 December 2008

WEATHER: 5 - 10°F, cloudy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Helen Haase;

Terra Engineering Construction (Contractor): Kurt Kleven, David King;

Equipment: CAT Track Loader (963C), John Deere Backhoe (690ELC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250, CAT 563C Sheeps foot compactor

Activities:

0700 – Arrive on-site

0710 – 0945 - The Contractor resumed construction the cover system over the IDW trench. They finished the third 10-inch lift of the clay cover portion of the cover system. With this lift, the Contractor constructed 30-inch thick clay cover.

0945 – 1300 – The Contractor started the placement of 6-inches of topsoil over the completed clay cover for the IDW trench.

1300 – 1330 – The Contractor reshaped the clay stockpile west of the IDW trench that will be left-in place to create shallower side slopes and broke up the soil clods. This stockpile will be utilized during the construction of the landfill clay cover.

1330 – Kurt left the site.

1430 – Left the site.

Arrived on site: 0700

Left Site: 1430

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 7.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Well Installation Date: 8 December 2008

WEATHER: 5 - 10°F, cloudy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Bryant Lewis;

Terra Engineering Construction (Contractor): Kurt Kleven, Paul Krantz, Brandon VanPembrook, and Jeff Schultz.

Equipment: CAT Track Loader (963C), John Deere Backhoe (690ELC), John Deere Dozer (550H), John Deere Roller Compactor (CA15), Bobcat T250, CAT 563C Sheeps foot compactor, Bobcat T190, 2 Chevy trucks.

Activities:

0700 – Arrive on-site

0720 – 0730 – Tailgate meeting with all personnel on-site. Discussed what the on-going activities are and the health and safety requirements.

0730 – 0800 – The Contractor prepped for installing turbine vents and sample ports by loading the supplies into their trucks.

0800 – 1400 – The Contractor worked on installing the turbine vents and sample ports. The Contractor completed installing sample ports and turbine vents. All dual phase wells had sample ports and turbine vents installed. All but 10 gas vents had turbines and sample ports installed. Sample ports were installed at approximately 5.5 ft above ground surface as required by the design drawings.

1200 – 1400 – Installed silt fence down slope of disturbed areas associated with the clay stockpile that was left-in-place and the IDW trench location. The silt fence is shown on the photo log on December 8th. The Contractor will stabilize the disturbed areas (e.g., applying seed, mulch etc) as soon as the weather permits.

1440 – Backhoe left the site.

1505 – Bobcat T250 left the site with Paul and Jeff.

1515 – Left the site

Arrived on site: 0700

Left Site: 1515

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PER: Kristi Kern

HRS: 8.25 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Turbine installation Date: 11 December 2008

WEATHER: 25°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Bryant Lewis;

Terra Engineering Construction (Contractor): Kurt Kleven.

Equipment: John Deere Dozer (550H), John Deere Roller Compactor (CA15), CAT 563C Sheeps foot compactor, Bobcat T190.

Activities:

1230 – Arrive on-site. Kurt plowed the entrance road.

1240 – 1300 – Prepped for vent installation by loading the supplies into Bobcat. The Contractor indicated that they would install the remaining turbines, but did not have the required tools for the installation of sample ports.

1300 – 1440 – Installed turbines on GV-14, GV-13, GV-12, GV-16, GV-10, gV-37, GV-9, GV-33, GV-35, GV-36.

1500 – Left the site.

Arrived on site: 1230

Left Site: 1500

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PER: Kristi Kern

HRS: 2.50 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Sample port installation Date: 12 December 2008

WEATHER: 15°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern;

CDM (IEPA's Oversight): Bryant Lewis;

Terra Engineering Construction (Contractor): Paul Krantz, Jeff Schultz.

Equipment: John Deere Dozer (550H), John Deere Roller Compactor (CA15), CAT 563C Sheeps foot compactor, Bobcat T190, Chevy Truck.

Activities:

0800–Arrive on-site.

0805–0810–Prepped for sample port installation by loading the supplies into their trucks.

0810 - 1030 - Installed sample ports on remaining gas vents (GV-14, GV-13, GV-12, GV-16, GV-10, GV-37, GV-9, GV-33, GV-35, GV-36). Sample ports were installed at approximately 5.5 ft above ground surface as required by the design drawings.

1030–1200–The Contractor cleaned up and packed extra materials up. Bobcat T190 was taken off-site.

The Contractor completed the installation of the gas vents and dual phase wells. However, they will be back to the Site for completing the installation of the erosion and sediment control features and well protection fences when the weather permits.

12:00 - Left the site. Stopped field construction activities until weather permits.

Arrived on site: 0800

Left Site: 1200

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PER: Kristi Kern

HRS: 4.00 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: gas concentration readings Date: 16 December 2008

WEATHER: 15°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern, Jordan Decker;

Activities:

0830–Arrive on-site. No construction activities have occurred since 12/12/2008 and should not continue until weather permits.

0830–0845–Calibrated GEM-500 gas meter and prepped for taking gas readings.

0845 - 1230–Took gas readings at all installed vents and wells. Four sample ports appeared to not be functioning properly (DP-11, DP-13, GV-12, GV-14). The gas reading results are summarized in the attached table.

1230–Left the site.

Arrived on site: 0830

Left Site: 1230

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PER: Kristi Kern

HRS: 4.00 hours

SHEET NO 1 OF 1

Gas Concentration Readings 12/16/2008

Well/Vent ID	Gas Concentration (%)		
	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
DP-1	31.0	31.0	12.8
DP-2	40.3	38.5	9.0
DP-3	51.4	35.8	12.3
DP-4	30.0	31.6	14.1
DP-5	54.7	37.6	7.2
DP-6	24.3	23.6	13.8
DP-7	43.5	39.6	12.4
DP-8	22.7	21.1	14.4
DP-9	47.8	37.8	14.2
DP-10	28.2	24.0	14.8
DP-11	0.0	0.1	20.5
DP-12	36.7	37.6	10.1
DP-13	0.0	0.2	19.4
DP-14	43.1	39.5	5.9
DP-15	28.9	24.1	12.8
DP-16	24.8	28.0	12.7
DP-17	38.1	37.0	11.8
GV-1	30.6	36.2	11.0
GV-2	15.8	19.4	12.4
GV-3	30.0	37.0	1.8
GV-4	39.0	43.6	8.0
GV-5	21.2	23.6	14.9
GV-6	21.7	21.1	12.7
GV-7	18.7	17.9	15.2
GV-8	49.1	44.2	6.7
GV-9	6.7	4.3	18.7
GV-10	21.1	19.2	16.9
GV-11	25.1	22.2	14.0
GV-12	0.0	0.2	19.9
GV-13	25.8	25.0	13.7
GV-14	0.0	0.2	20.9
GV-15	38.2	35.2	9.4
GV-16	30.4	24.9	11.0
GV-17	39.5	39.0	11.1
GV-18	9.3	7.1	18.8
GV-19	37.2	35.2	13.0
GV-20	54.3	34.8	10.0
GV-21	48.5	46.5	4.9
GV-22	10.5	10.9	17.1
GV-23	30.4	30.8	15.0
GV-24	11.7	12.6	17.4
GV-25	38.8	54.1	6.1
GV-26	34.5	42.9	9.4

 = gas sample port appears to be plugged

Gas Concentration Readings 12/16/2008

GV-27	5.9	5.1	18.1
GV-28	21.4	24.1	12.2
GV-29	38.0	41.2	7.7
GV-30	19.4	21.8	16.3
GV-31	4.5	3.3	20.1
GV-32	9.4	6.6	18.8
GV-33	10.6	8.9	18.2
GV-34	19.5	20.7	17.1
GV-35	26.4	22.0	15.6
GV-36	44.1	45.0	8.4
GV-37	1.4	1.4	20.0
GV-38	18.7	21.6	13.1
GV-39	28.3	28.7	14.1
GV-40	41.7	47.4	7.8
GV-41	23.3	27.0	12.3

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: gas concentration and water readings; CQA of concrete pipe placement Date: 28 January 2009

WEATHER: 10°F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern, Jordan Decker

Terra Engineering and Construction (Contractor): Paul Krantz, Luke Klemp

Equipment on-site:

Bobcat T250, John Deere 85D Backhoe, 2 Chevy Trucks (Contractor's and Geosyntec's)

Activities:

0900 – Arrive on-site.

0900 – 0910 – Talked to Paul Krantz about his plan for the day. He indicated he would place concrete pipes around the wells/vents for protection.

0950 – Started placement of concrete pipes with GV – 15. CA-1 aggregate was placed around the existing gas vent to provide a level foundation for the concrete pipe. The pipe was hoisted using a backhoe and a chain and lowered over the gas vent.

1030 – 1630 - Took gas level and leachate level readings from the wells/vents. Also took gas readings from the residential gas probes, and gas probes and riser columns on-site.

1630 – Contractor finished placing concrete pipes for the day. Twenty pipes were placed for the day.

1700 – Left the site.

Arrived on site: 0900

Left Site: 1700

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PER: Kristi Kern

HRS: 8.00 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: gas concentration and water readings; CQA of concrete pipe placement Date: 29 January 2009

WEATHER: 10°F, cloudy and windy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern, Jordan Decker

Terra Engineering and Construction (Contractor): Paul Krantz, Luke Klemp

Equipment on-site:

Bobcat T250, John Deere 85D Backhoe, 2 Chevy Trucks (Contractor's and Geosyntec's)

Activities:

0730 – Arrive on-site.

0740 – Started gas monitoring, leachate level readings and inspection of wells and sample ports after installation of concrete pipes.

1100 – Talked to Burak and decided to not finish water level readings because icy conditions were making it unsafe and more time consuming and we would not be able to finish all readings that day.

1530 – Finished gas readings.

1545 – Talked to Contractor about broken sample port and said he would replace it tomorrow at GV-19. Also, mentioned that two turbines did not appear to be working properly (GV-07 and GV-17). Contractor said he would check out the turbines and see if he could get them to work.

1600 – Left the site. Contractor was planning to remain on-site for a while (1-2 hours) to install more concrete pipes.

Arrived on site: 0730

Left Site: 1600

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HRS: 8.50 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Gas readings, Pressure readings Date: 27 February 2009

WEATHER: 20° - 30° F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern, Burak Tanyu

Activities:

Arrive on-site.

Took gas concentration readings at various locations and the concentrations are as shown below.

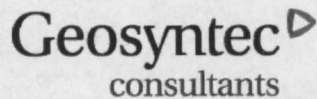
Well	Time	Pressure	Methane (CH ₄)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)	Comments
		inches H ₂ O	%	%	%	
MW-13	10:42 AM	-2.0	0.0	0.1	20.5	Read 3 times with all open, after RC-5 closed, all open
MW-14	4:07 PM	-0.4	0.0	0.1	19.1	Lock is fully rusted
GP-33	10:37 AM	-2.0	0.0	0.1	20.3	Took a while to stabilize
GV-25	12:25 PM	N/A	1.3	3.3	18.7	
GV-26	12:14 PM	N/A	20.0	18.1	6.0	
GV-1	12:37 PM		0.0	0.1	20.6	Most Likely plugged (no smell)
GV-2	12:46 PM		0.0	0.1	20.6	
GV-3	12:54 PM		0.0	0.1	20.5	
GV-4	1:03 PM		2.4	4.0	17.9	
GV-5	1:13 PM		0.0	0.1	20.5	Most Likely plugged (no smell)
GV-28	1:01 PM		0.0	0.1	20.4	
GV-6	1:28 PM		0.0	0.1	20.4	
RC-1-AP						
RC-1-AV	10:07 AM	-8.0	0.0	0.2	20.0	
RC-2-AP	10:11 AM	-5.0	4.9	3.7	18.2	Sample port broken
RC-2-AV	10:11 AM	-10.0	4.7	3.5	18.0	Sample port broken
RC-3-AP	10:26 AM	-4.0	0.8	0.9	19.9	Sample port broken
RC-3-AV	10:26 AM	-11.0	0.2	0.4	20.2	Sample port broken
RC-4-AP	11:06 AM	-4.5	0.0	0.4	20.3	
RC-4-AV	11:06 AM	-14.0	0.0	0.4	20.3	Sample port broken
RC-5-AP	11:13 AM	-2.5	0.0	0.3	20.3	Sample port broken
RC-5-AV	11:13 AM	-16.5	0.0	0.3	20.3	
BLOWER-Right	11:25 AM	-18.5	1.7	1.6	19.6	
BLOWER-Left	11:25 AM	-18.5	0.3	0.4	20.1	Sample port broken
KP - NORTH	11:30 AM	No Vacuum	NA	NA	NA	
KP - SOUTH	11:52 AM	Strong	NA	NA	NA	

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PER: Kristi Kern

HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Gas readings, Pressure readings Date: 27 February 2009

WEATHER: 20° - 30° F, clear

Took water level readings at various gas vents, monitoring wells and condensates. The water depths are as shown below.

Location	Water Depth Below Top of Casing (ft)	Bottom Depth Below Top of Casing	Casing Stick Up Height (in)	Water Depth BGS (ft)
GV-25	18.05	20.30	83.0	11.13
GV-26	19.05	21.80	89.0	11.63
GV-1	19.15	20.50	86.0	11.98
GV-2	19.75	19.80	92.0	12.08
GV-3	N/A	N/A	83.0	N/A
GV-4	19.20	19.20	92.0	11.53
GV-5	18.20	18.40	82.0	11.37
GV-28	16.20	16.40	93.0	8.45
GV-6	18.10	22.85	92.0	10.43
MW-13	20.10	24.61	12.0	19.10
MW-14	26.15	33.40	31.5	23.53
North - Condensate	10.85	13.40	51.0	6.60
South - Condensate	N/A	15.30	55.0	N/A

Adjusted the valves on the Riser Columns to monitor the change in pressure at the blower. The pressure readings are as shown below.

Location	Current Cond.	Valve Adjustments							
Blower - Right	-18.5	-12.5	13.5	-18.5	-16	-14	-11.5	-19.5	-15
Blower - Left	-18.5	-12.5							
North - Condensate	None								
South - Condensate	Strong								
RC-5 Available	-16.5	-11.5	12	-17.5		-13		-19	
RC-5 Applied	-2.5	Off	On	-2.5				-3	
RC-4 Available	-14	-8.5		Off	On			-17.5	
RC-4 Applied	-4.5	-2.7		Off	On				
RC-3 Available	-11	-8				-14	On		
RC-3 Applied	-4	-2.5				Off	On		
RC-2 Available	-10	-7				-1.3		-16	On
RC-2 Applied	-5	-3.5				-6		Off	On
RC-1 Available	-8	-8				-10.5		-13	
RC-1 Applied	Broken connection								

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HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Landfill Gas Vent and Dual Phase Well Installation

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Repair RC-1 and RC-2, sample port, GV-10 fix Date: 12 March 2009

WEATHER: 10° - 20° F, clear

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern

Terra Engineering and Construction (Contractor): Paul Krantz

Equipment on-site:

Bobcat T250, Chevy Truck

Activities:

0645 – Arrive on-site.

0730 – Contractor arrived on-site.

0730 – 0745 – Talked to Contractor about the day's activities. Discussed that we would first repair RC-1, then repair RC-2, then install a new sample port in the pipe between the blower and flare, then fix the alignment of the concrete pipe around GV-10 and lastly inspect the blockage of GV-3.

0800 – Turned off blower.

0815 – 0915 – Repaired RC-1. Cut off approximately 1 ft of the top horizontal section. Reattached 90 degree elbow to top section by butt welding the seam. Attached bottom of 90 degree elbow to vertical section using an electrofuse coupling.

0920 – 1000 – Repaired RC-2. Cut off approximately 1 ft section of east vertical pipe because it was approximately 1 ft longer than west vertical pipe and reattached the vertical pipe using a butt weld.

1010 – 1020 – Installed gas sample port down stream of blower (same type of gas sample port as on intake pipe to blower).

1025 – Turned blower on.

1030 – 1050 – Unloaded Bobcat and got equipment for moving concrete pipe around GV-10.

1050 – 1125 – Moved concrete pipe around GV-10 by lifting the edge of the pipe and placing additional aggregate to support the concrete pipe.

1130 – 1200 – Took turbine off of GV-03 and saw that ice was blocking the inside of the pipe approximately 7.5 ft below the top of the pipe. The ice appeared to be melting around the edges and we could smell methane coming up from the vent. Geosyntec will check this gas vent again prior to the completion of the gas vent construction effort.

1200 – 1220 – Looked at all other concrete pipes installed around GVs and DPs and concluded that no other concrete pipes were required to be moved or repositioned.

1220 – 1320 – Took pressure readings at the blower, RC-1 and RC-2.

1320 – Left the site

Arrived on site: 0645

Left Site: 1320

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PER: Kristi Kern

HRS: 6.5 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Resident Blower and Methane detector install
LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 800 TASK NO.: ***
DESCRIPTION: Replace broken blowers and detectors Date: 27 April 2009
WEATHER: 60° - 80° F, cloudy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern
TransEnvironmental (Contractor): Matt Thompson; Steve Saunders
Bureau Veritas (Previous Design Engineer): Steve Swenson; Jennifer Farris
CDM (IEPA oversight): Rebecca Hong; John Grabs

Activities:

0730 – Arrived on-site. Supplies were picked up from storage shed. Waited at the site for others to show up.
0750 – John Grabs and Rebecca Hong from CDM (IEPA oversight) arrived on-site. I discussed with them the activities that would be going on in the next few days.
0815 – Drove to the residential subdivision and met with Steve Swenson, Jennifer Farris, Matt Thompson, and Steve Saunders. We briefly discussed the plan for the day, which was to replace the broken methane blowers and detectors.
0830 – Arrived at Don McCalisters (618 Bethany) and discussed the items he would need. He did not have a blower, box, and pipes installed. Transenvironmental decided to build the box for the blower at the shop, so Matt Thompson left to do that.
0900 – Steve Swenson left the site.
0930 – Steve replaced blower at Jamie Garcia's (2110 Chamberlain)
1000 – Fixed discharge pipe at Bill Broze's (2117 Chamberlain)
1015 – Transenvironmental went to pick up supplies.
1030 – Stopped by the landfill to see if the Landscaper showed up. The gate was left open, so I called the landscaper to see if they had left it open. They said they saw ComEd leave and not shut the gate. The Landscaper also indicated that they looked around the site and determined that it would be too wet to do any site activities. Locked the gate and left the landfill.
1100 – 1200 – Lunch
1200 – Replaced methane blower at Jorge Arroyo's (600 Bethany)
1315 – Matt Thompson came back with box for Don McCalisters blower.
1338 – Fixed discharge pipe at John Santoyo's (2121 Meyers)
1400 – John Grabs left the site.
1515 – Transenvironmental indicated they were done for the day.

Arrived on site: 0730

Left Site: 1515

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Resident Blower and Methane detector install

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 800 TASK NO.: ***

DESCRIPTION: Replace broken blowers and detectors Date: 28 April 2009

WEATHER: 40° - 60° F, cloudy

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern
TransEnvironmental (Contractor): Al Hall; Steve Saunders
Bureau Veritas (Previous Design Engineer): Jennifer Farris
CDM (IEPA oversight): Rebecca Hong

Activities:

0830 – Arrived at McCalister's and continued installing the blower.

0840 – Talked to the landscaper again and he indicated that he would not be able to be on-site again tomorrow, but would try for Thursday.

1435 – Finished installing the blower at the McCalister's

1500 – 1520 – Installed methane detector and speaker and Bill Kelly's (2121 Bridgewater).

1525 – 1550 – Installed methane detector and speaker at John Santoyo's (2121 Meyers). Mr. Santoyo indicated that his blower was not working.

1550 – 1615 – Talked to Bill Broze (2117 Chamberlain) and he indicated his basement was too full to have us get through to replace the detector. We said we could come back on Thursday so he could clear room. He also indicated that his blower was broken; however he was not on the list to get a new one. John Seymour spoke with Bill Broze and arrangements were made to install a blower.

1620 – 1640 – Went to the landfill with Transenvironmental to see if the ground was dry enough to get to the pond. They said it was not dry enough and they would have to wait until Thursday to pump the condensate from the northern knockout pot.

1800 – 1815 – Installed new methane detector and speaker and Jamie Garcia's (2110 Chamberlain).

1820 – Talked to Steve Lagel (2111 Chamberlain) about replacing his methane detector and speaker. He said he was too busy to let someone inside. I said we could come back when it would be convenient. I said I could return Thursday evening if he would be around.

1830 – Left the site.

Arrived on site: 0830

Left Site: 1830

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PER: Kristi Kern

HRS: 10 hours

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DAILY FIELD REPORT

PROJECT: MIG/DeWane Quarterly Gas Monitoring

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 800 TASK NO.: ***

DESCRIPTION: Gas readings Date: 29 April 2009

WEATHER: 40° - 60° F, overcast

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern

Activities:

0815 – Arrived on-site and started the quarterly gas monitoring.

1515 – Finished quarterly gas readings

1530 – Returned gas meter via FedEx.

Arrived on site: 0815

Left Site: 1530

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 7.25 hours

SHEET NO 1 OF 1

Geosyntec[®] consultants

engineers | scientists | innovators

134 N. LaSalle Street
Suite 300
Chicago, Illinois 60602
312.658.0500

DAILY FIELD REPORT

PROJECT: MIG/DeWane Quarterly Gas Monitoring

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 800 TASK NO.: ***

DESCRIPTION: Gas readings Date: 30 April 2009

WEATHER: 40° - 60° F, raining

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern

Activities:

0800 – 0845 - Talked to Transenvironmental and they said since it's raining that they cannot do the pumping of the condensate from the northern knockout pot today or tomorrow. Landscaper also indicated that they would not be able to work today or the rest of the week due to weather.

0930 – 1000 – Installed methane detector and speaker and Bill Broze's (2117 Chamberlain).

1000 – Dropped off detector and speaker with Steve Lagel's mother with instructions on how to install so he would install himself.

1015 – 1030 – Dropped off supplies at the storage shed.

1030 - Left the site.

Arrived on site: 0800

Left Site: 1030

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 2.5 hours

SHEET NO 1 OF 1



engineers | scientists | innovators

134 N. LaSalle Street
Suite 300
Chicago, Illinois 60602
312.658.0500

DAILY FIELD REPORT

PROJECT: MIG/DeWane CQA

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Oversee grading and seeding, fertilizing and mulching of disturbed areas Date: 4 May 2009

WEATHER: 67° - 74° F, partly cloudy

Equipment on site:

Bobcat T300 (3), GMC Sierra Truck, John Deere 6430 Tractor (2), Haybuster 2800 straw blower, Supersucker vacuum truck

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern

Dunn-Rite (Landscape, Subcontractor to Terra Engineering and Construction): Tim Thompson, Roberto Perez, Darian Belski, Brian White

Transenvironmental: Matt Thompson, Steve Saunders

Activities:

0830 – Talked to Landscaper (Kevin Winger) and he indicated that they were on-site working today.

0830 – 0930 – Went to the office and picked up supplies left for the site.

1100 – Arrived on-site. Talked to Tim and he indicated that they had already straightened out the concrete pipes that had settled unevenly. I drove around and checked that all the concrete pipes were level and they were.

1135 – Talked to Transenvironmental and they indicated that they could come out to the site around 2 pm and pump the condensate from the northern knockout pot.

1140 – 1600 - Landscaper applied "Green Yard" Fertilizer and IDOT Class 2 seed mix to all areas disturbed by construction activities with tractor.

1250 – 1345 - Transenvironmental arrived on-site with a "Supersucker" vacuum truck. The initial level of the condensate was approximately 3.13 ft. Transenvironmental pumped the condensate until the knockout pot was empty. Measured the water level and it was dry. The knockout pot had a lot of suction after the pumping was done.

1355 – 1410 – Dumped condensate into the pond on the eastern portion of the site.

1420 – Transenvironmental left the site.

1500 – Landscaper indicated that the straw blower wasn't working correctly and went back to the shop to fix it. They later indicated it was an issue with the straw being frozen, so they separated the straw out and did not use the frozen portions and the blower worked. Seed was still being applied one person (Darian) with a tractor.

1600 – Finished seeding the site.

1600 – Left the site.

Arrived on site: 1100

Left Site: 1600

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 5 hours

SHEET NO 1 OF 1

Geosyntec[®] consultants

engineers | scientists | innovators

134 N. LaSalle Street
Suite 300
Chicago, Illinois 60602
312.658.0500

DAILY FIELD REPORT

PROJECT: MIG/DeWane CQA

LOCATION: Belvidere, Illinois PROJECT NO.: CHE8214 PHASE NO: 400 TASK NO.: 404

DESCRIPTION: Oversee grading and seeding, fertilizing and mulching of disturbed areas Date: 5 May 2009

WEATHER: 55° - 70° F, mostly cloudy

Equipment on site:

Bobcat T300 (3), Chevy Truck (4), John Deere 6430 Tractor, Haybuster 2800 straw blower, Hydroseeder

Personnel on site:

Geosyntec (Owner's Representative): Kristi Kern

Dunn-Rite (Landscape, Hired by Terra Engineering and Construction): Tim Thompson, Roberto Perez, Darian Belski, John Winger

CDM (IEPA oversight): Rebecca Hong

Activities:

0630 – Arrived on-site. Talked to Darian about where silt fence should be installed and he installed at required locations. Landscaper was continuing to place straw mulch and install silt fence.

0800 – 0815 – Took pressure readings at the Riser Columns and Blower to see if the condensate pot cleanout had affected any of the pressures. It appears that RC-1 is plugged and there is no flow through RC-1.

0915 – 0940 – Mike Busch (co-owner of Dunn-Rite) visited the site to see how the progress was going.

0930 - 0945 – Kevin Winger (co-owner of Dunn-Rite) visited the site to see how the progress was going.

1315 – Brought Hydroseeder on-site to hydromulch additional areas that did not get straw mulch. The hydroseed mixture contained wood fiber, water, seed and fertilizer.

1635 – Finished installation of silt fence (see Figure 2).

1710 – Finished hydroseeding.

1715 – Left the site.

Arrived on site: 0630

Left Site: 1715

COPY TO: File, Burak Tanyu

PER: Kristi Kern

HRS: 10.75 hours

SHEET NO 1 OF 1



TERRA®

▲ ENGINEERING & CONSTRUCTION CORPORATION ▲

LETTER OF TRANSMITTAL

DATE: December 2, 2008 **Job:** #880
ATTN: Burak Tanyu, PHD
RE: Foreman Reports 11/17/08 & 11/24/08
MIG/Dewane L.F.
TO: Geosyntec Consultants
134 N. LaSalle St., Suite 300
Chicago, IL 60602

WE ARE SENDING THE FOLLOWING:

1 – Copy of Foreman Reports weeks of 11/17/08 & 11/24/08

REMARKS:

For your records

Copy to: File

Signed:


John R. Karsten, P.E.
President

If enclosures are not as noted, kindly notify us at once.

2201 VONDRON ROAD • MADISON, WI 53718-6795

PHONE: 608/221-3501 • FAX: 608/221-4075 • E-MAIL: terra@terraconst.com

VISIT OUR WEBSITE: www.terraconst.com

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01/94

JOB NO. 450 JOB NAME: Mig/10-warm LF JOB SUPERVISOR: S. S. 16
 DAY: Mon DATE: 11-17-08 WEATHER: Clear TEMPERATURE: 40⁰⁰

JOB CONDITIONS		DAILY TOTALS			
CUT/SOIL		EMP#	NAME	MACHINE #	HRS
SOIL MOISTURE: DRY MOIST WET SATURATED		102	D. King	5043	7.0
SOIL TYPE: A B C		629	K. Klemmer	X	8.5
TRENCH WIDTH @ TOP					
COMPACTION TEST					
<u>DELAYS, SHORTAGE</u>					
MATERIAL					
EQUIPMENT					
LABOR					
<u>VERBAL INSTRUCTIONS</u>					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Worked on Rock on
all 3 Areas

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M. _____

TOOL BOX TALK

SUBJECT:

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: Mig/D JOB SUPERVISOR: S. Smith
 DAY: Tue DATE: 11-18-08 WEATHER: CLD TEMPERATURE: 70°

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		103	D. King	4019	
		100	B. King	4059	1.0
SOIL MOISTURE: DRY MOIST WET SATURATED		102	"	3003	1.0
SOIL TYPE: A B C OTHER:		104	K. King		10.5
TRENCH WIDTH @ TOP		DEPTH OF TRENCH			
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: SAFETY

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Did 3 Dual Phase wells
+ 1 GAS Vent

PRODUCTION REPORT

MAIN LINE				STRUCTURES	
LABOR CODE	QUANTITY FEET	LOCATION:		NO.	DEPTH
501		15.5	39.5	OP-11	47.5
501		14.5	39.0	OP-13	42.0
501		14.5	38.5	OP-5	46.5
503		12'	12'	SV-32	17

LATERALS		
LABOR CODE	QUANTITY FT:EA	LOCATION:

FINISH GRADING			FOOTING EXCAVATION			FOOTING BACKFILL		
LABOR CODE	QUANTITY STA:SF	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION

EARTHWORK - DEMOLITION

LABOR CODE												
MACHINE	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY

OFFICE USE ONLY

TODAY'S TOTAL

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-18-08

WELL NO. DP-5

WELL COORDINATES _____

EXIST. GROUND EL - 838.40

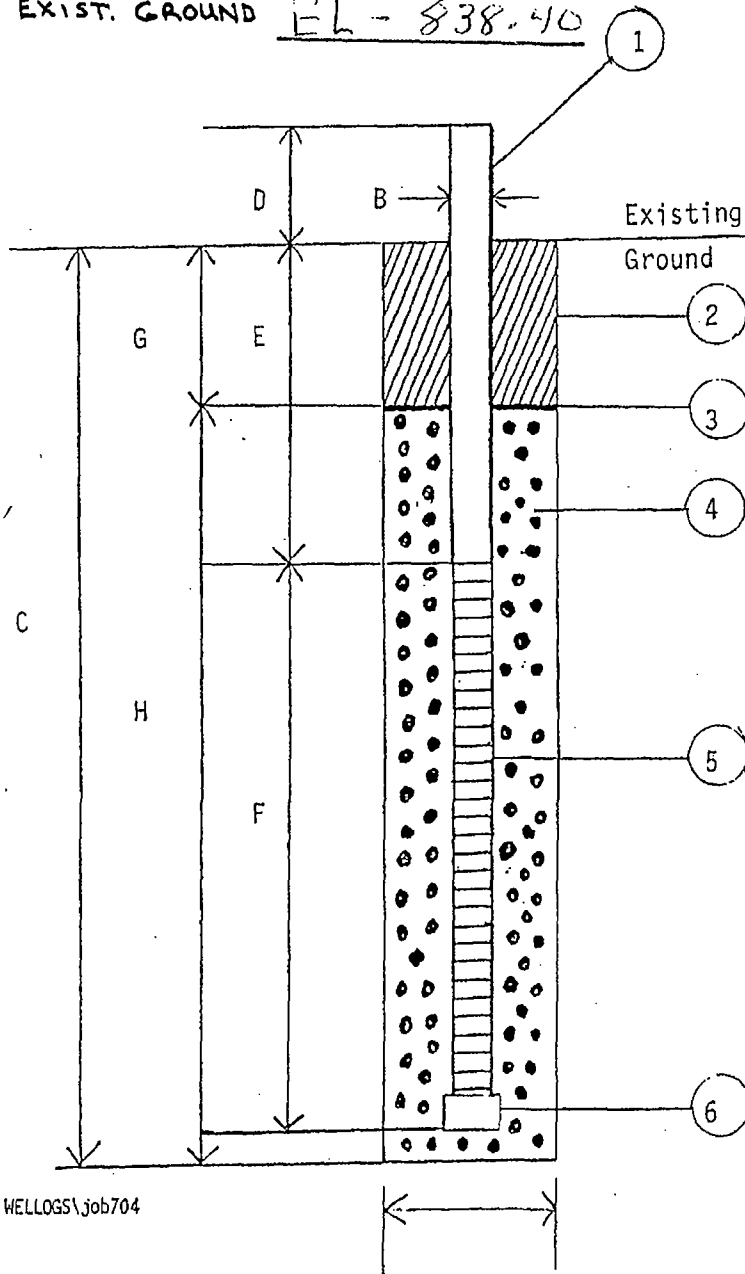
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>46.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>38.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>41.5</u> FT. |
| DEPTH TO REFUSE | <u>11</u> FT. |

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig/Dowry

GAS WELL NO.: DP-5

DATE: 11-18-08

E1 838.40

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-18-08

WELL NO. GV-32

WELL COORDINATES _____

EXIST. GROUND EL - 832.00

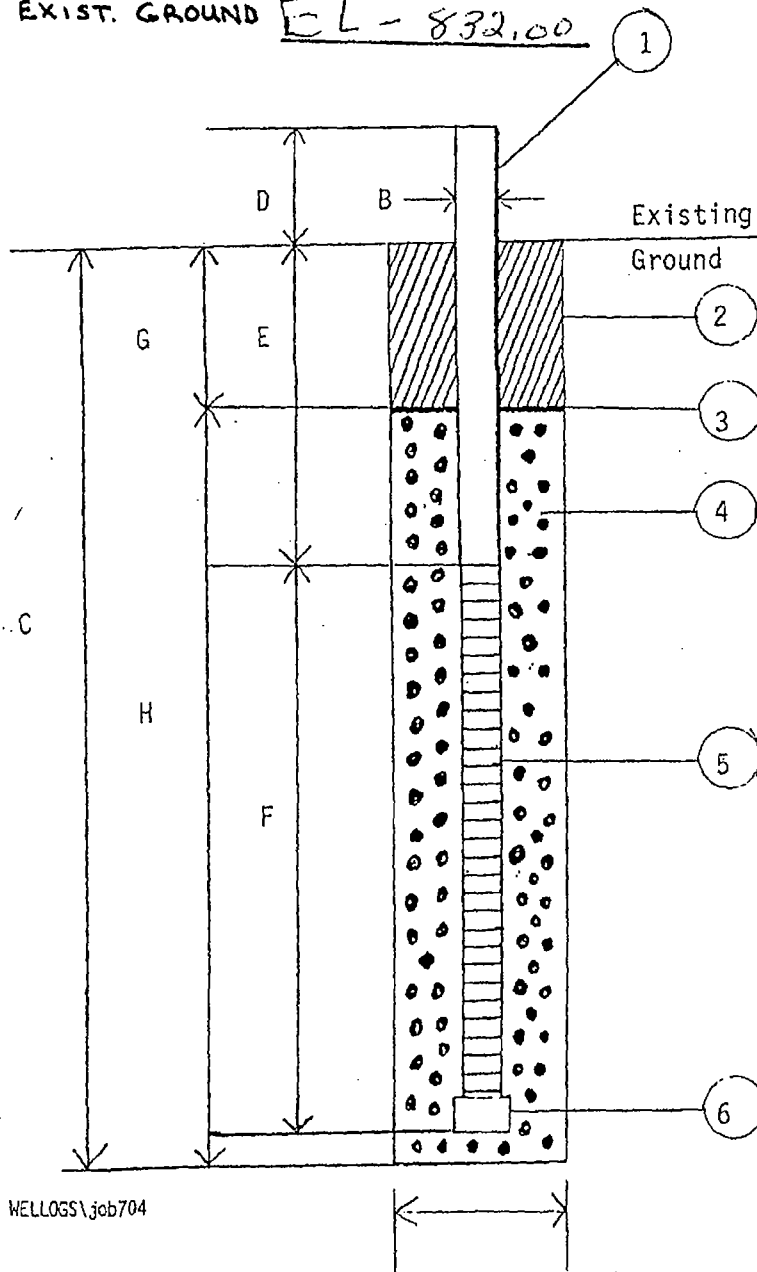
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>6</u> IN. |
| C) BORE DEPTH | <u>17</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>4.5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>12</u> FT. |
| G) UPPER BENTONITE SEAL | <u>3</u> FT. |
| H) WASHED STONE PACK | <u>14</u> FT. |
| DEPTH TO REFUSE | <u>10.5</u> FT. |

NOTES: _____



JOB: Mig / Duncan

GAS WELL NO.: GU - 32

EL 832, c c

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-18-08

WELL NO. DP-11

WELL COORDINATES _____

EXIST. GROUND EL 837.20

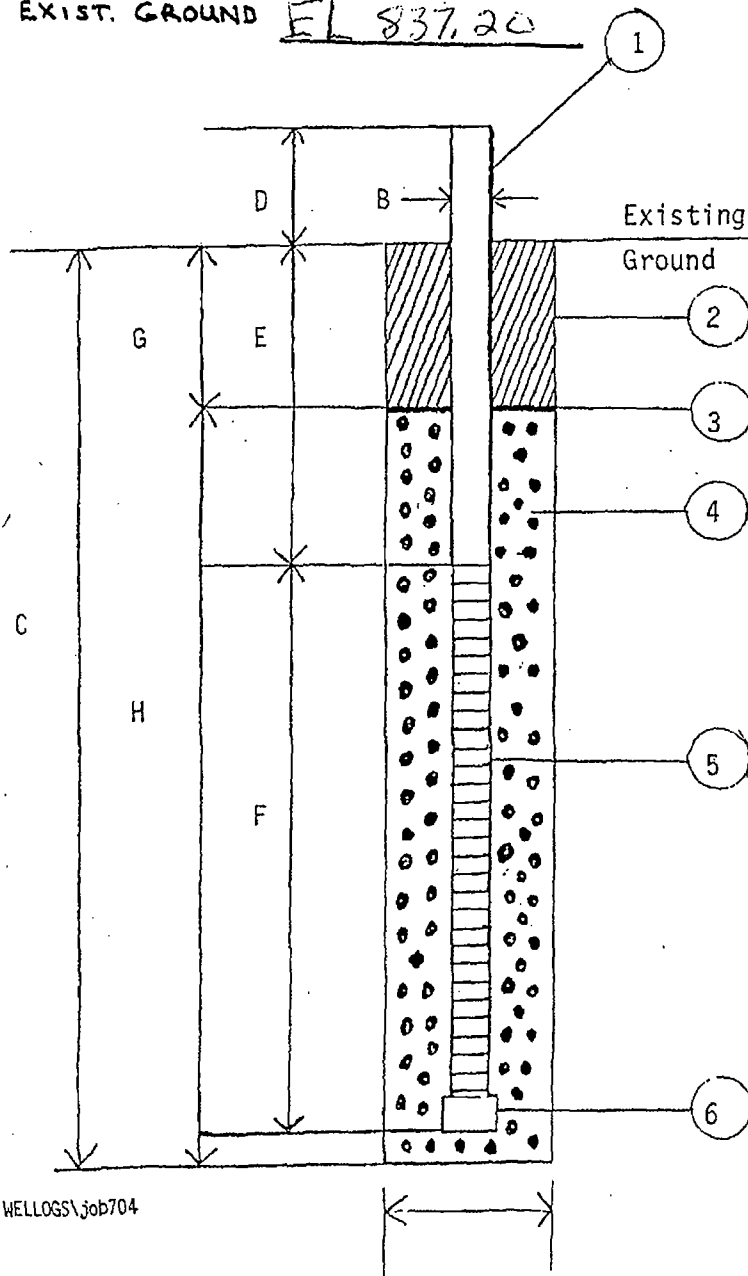
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>47.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>8</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>39.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>47.5</u> FT. |
| DEPTH TO REFUSE | <u>10.5</u> FT. |

NOTES: _____



JOB: Mig/News

GAS WELL NO.: 00-11

EL. 837.20

48' Total Bone Depth

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-18-08

WELL NO. DP-15

WELL COORDINATES _____

EXIST. GROUND EL 836.20

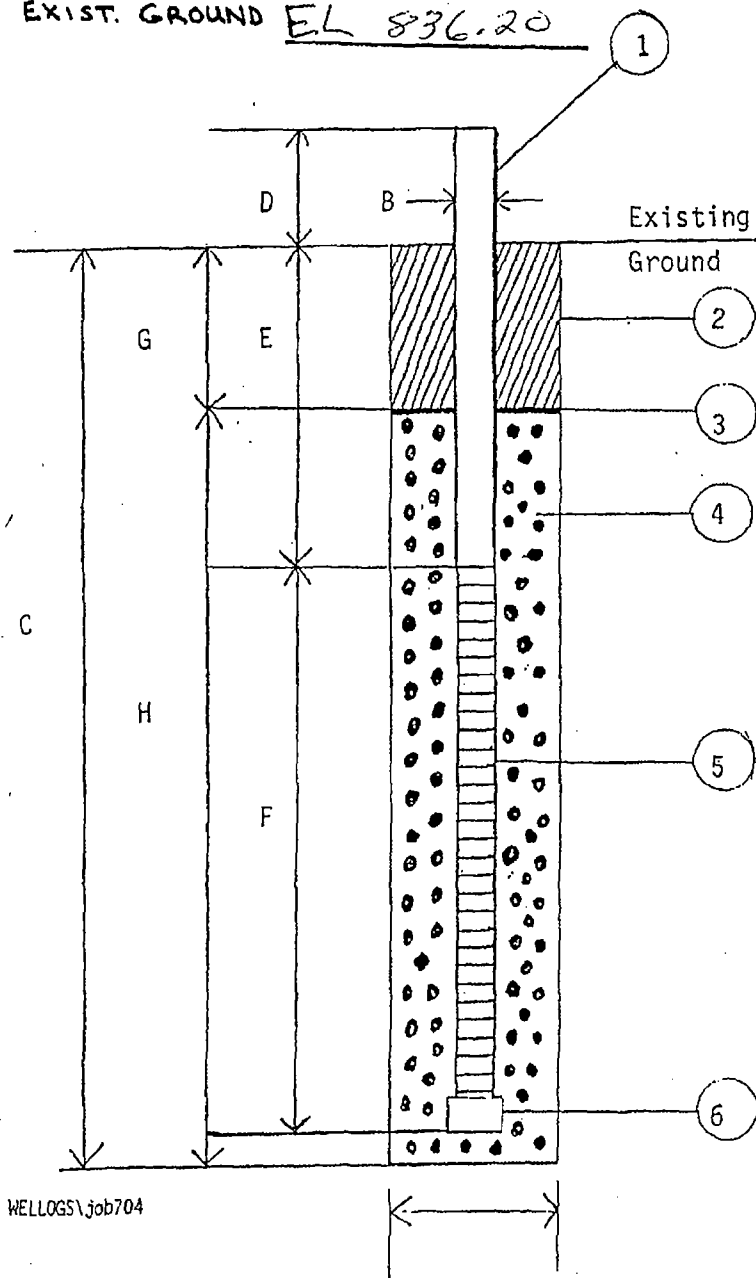
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>47</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>7</u> FT.
F) SLOTTED PIPE LENGTH	<u>39</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>42</u> FT.
DEPTH TO REFUSE	<u>10.5</u> FT.

NOTES: _____



WELLOGS\job704

JOB: Mid / New York

GAS WELL NO.: DP-13

DATE: 11-15-68

EL 836.20

48'	Total	Boat Depth
-----	-------	------------

01/94

JOB NO. 880 JOB NAME: Mig. Paving JOB SUPERVISOR: S. Smith
 DAY: Wed DATE: 11-19-08 WEATHER: Cloudy TEMPERATURE: 30°

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	D. K. King	4019	2.0
		1122	"	3003	1.5
SOIL MOISTURE: DRY MOIST WET SATURATED		1029	K. H. H. H.	6039	6.0
SOIL TYPE: A B C OTHER:		629	"	X	4.0
TRENCH WIDTH @ TOP	DEPTH OF TRENCH	193	S. S. W. 46	3113	10.5
COMPACTION TEST					
<u>DELAYS, SHORTAGES, PROBLEMS</u>					
MATERIAL					
EQUIPMENT					
LABOR					
<u>VERBAL INSTRUCTIONS</u>					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT:

☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

PRODUCTION REPORT

MAIN LINE				STRUCTURES	
ABOR CODE	QUANTITY FEET	LOCATION:		NO.	DEPTH
501		14.5	27	DP-1	35
501		14.5	30.1	DP-2	38.1
501		14.5	35.5	DP-7	43.5
501		14.5	36.5	DP-10	44.5

LATERALS		
LABOR CODE	QUANTITY FT:EA	LOCATION:

FINISH GRADING			FOOTING EXCAVATION			FOOTING BACKFILL		
LABOR CODE	QUANTITY STA:SF	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION

EARTHWORK - DEMOLITION

LABOR CODE												
MACHINE	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY

OFFICE USE ONLY

TODAY'S TOTAL

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC/DEWANE

DRILLING DATE 11-19-08

WELL NO. DP-07

WELL COORDINATES _____

EXIST. GROUND 839.70

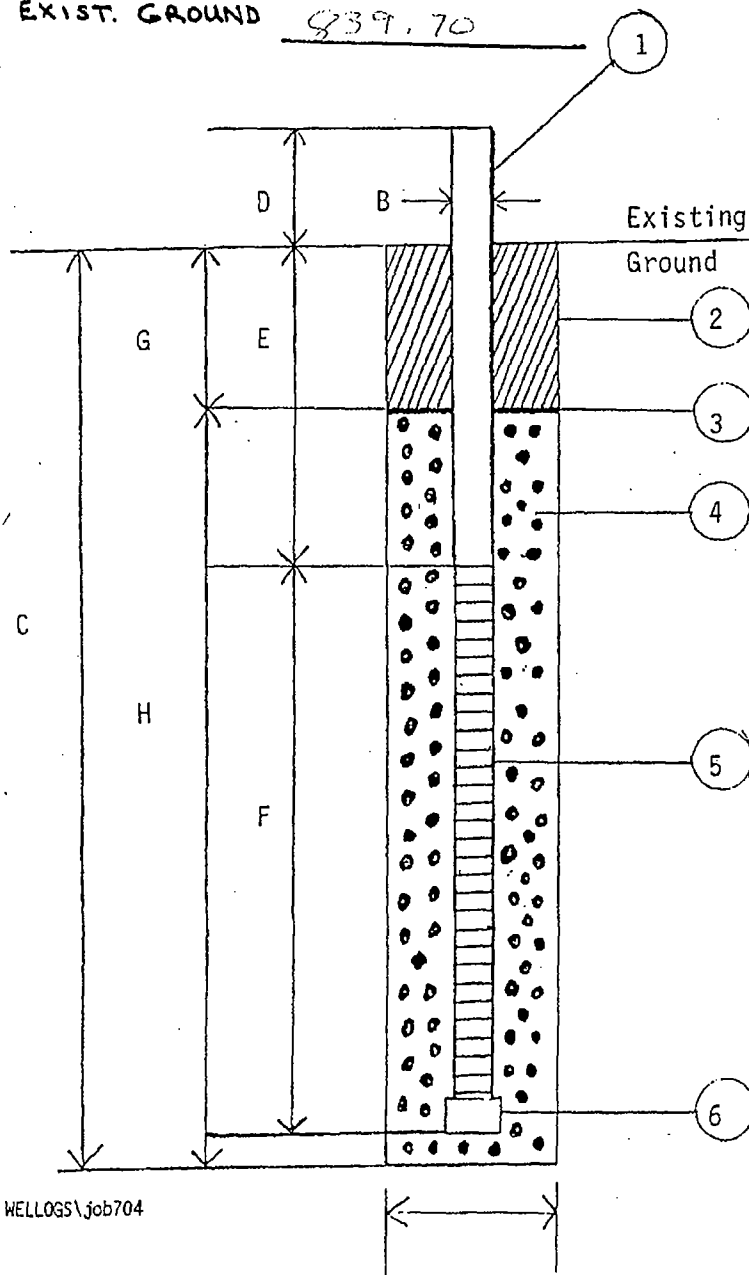
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>43.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7.0</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>33.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>46</u> FT. |
| DEPTH TO REFUSE | <u>15</u> FT. |

NOTES: Design Depth 43.5



FL 839.70

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC/DEWANE

DRILLING DATE 11-19-08

WELL NO. DP-02

WELL COORDINATES _____

EXIST. GROUND 833.60

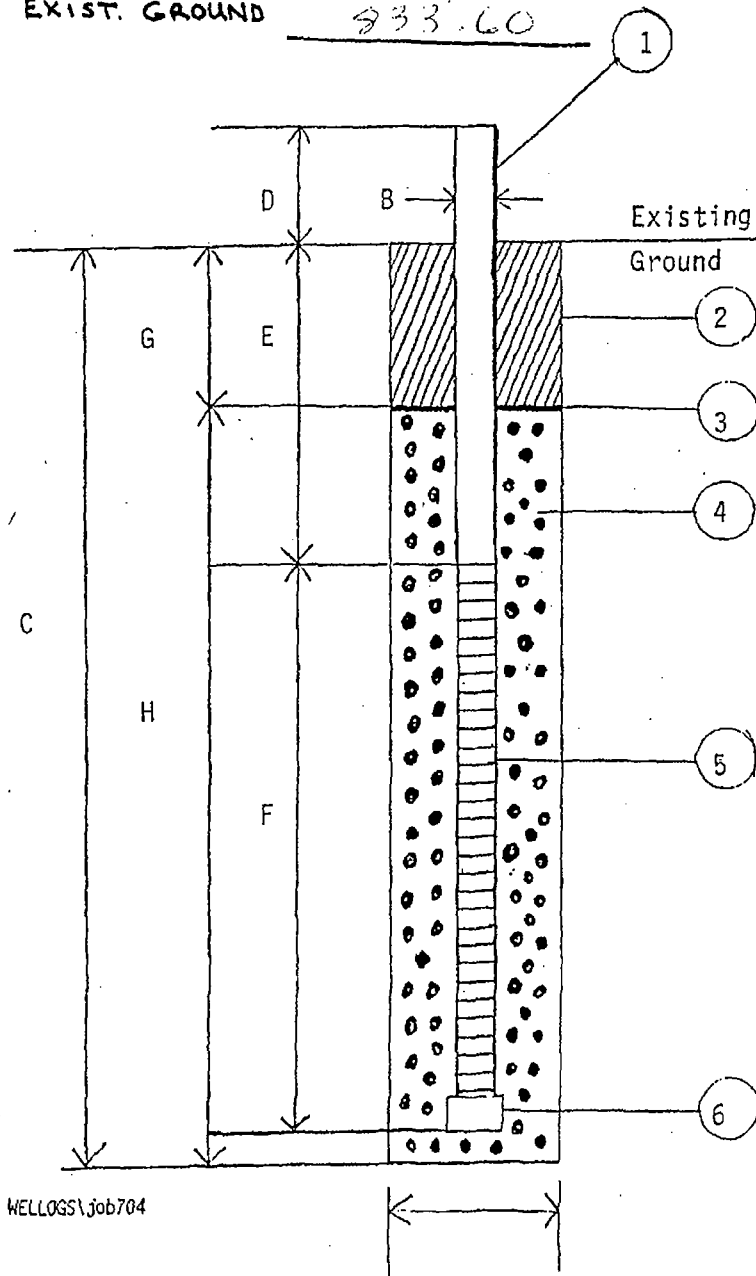
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>38.1</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>7</u> FT.
F) SLOTTED PIPE LENGTH	<u>30.1</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>33.1</u> FT.
DEPTH TO REFUSE	<u>41</u> FT.

NOTES: _____



WELLOGS\job704

JOB: m.g.f. Deane

GAS WELL NO.: DP-02

EL \$33.00

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-19-08

WELL NO. DP-10

WELL COORDINATES _____

EXIST. GROUND 838.30

MATERIAL LIST

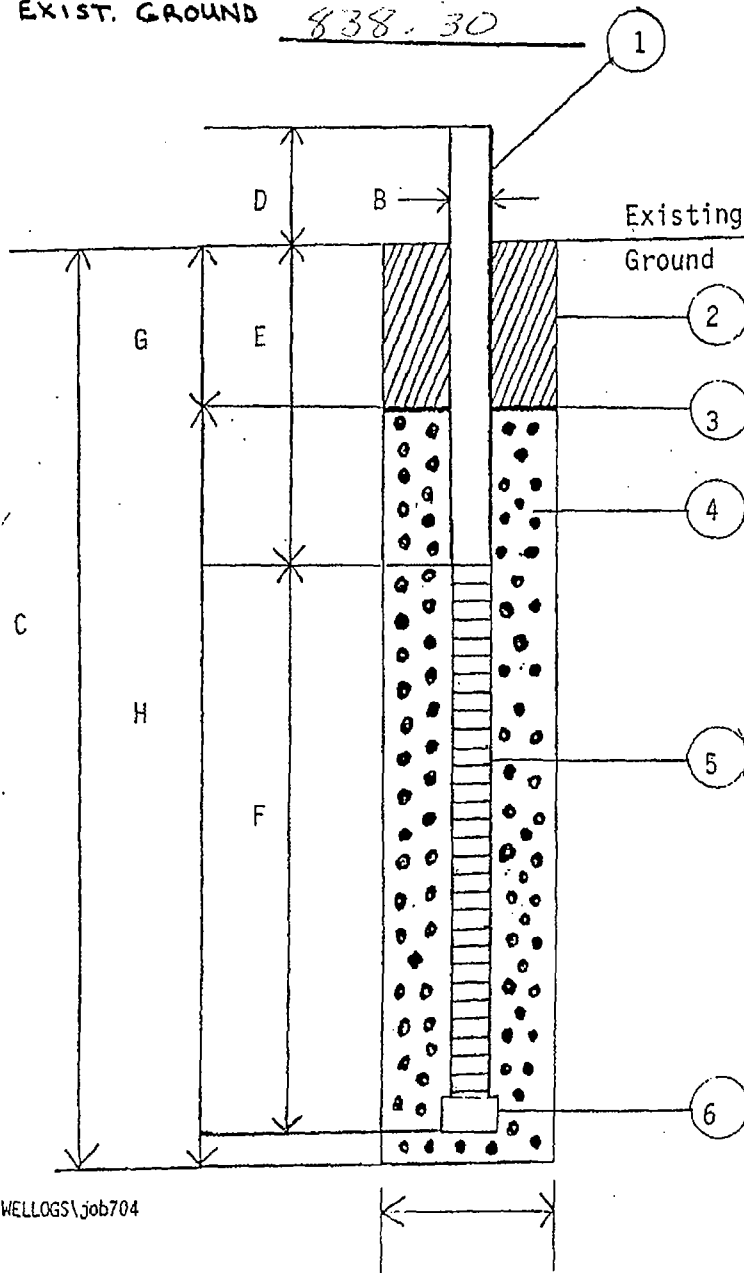
- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>45</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>7</u> FT.
F) SLOTTED PIPE LENGTH	<u>36.5</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>38.5</u> FT.
DEPTH TO REFUSE	<u>10</u> FT.

NOTES: EL - 838.30

1.5' stone Base



GAS EXTRACTION WELL LOGS

JOB: MIG/DRAWING

GAS WELL NO.: DP-10

DATE: 11-19-08

EL 838.30

DEPTH	DESCRIPTION OF WASTE D = DEMO T = TIRES H = HOUSEHOLD Y = YARD WASTE	DECOMPOSITION H = HIGHLY S = SLIGHT M = MODERATE	MOISTURE D = DRY M = MOIST S = SATURATED W = WET
0-10	Cover Dirt		
10-15'	H - Y & D	m	m
15-20	H - Y	m	m
20-25	H - D	M	m
25-30	H - D	M	w
30-35	H	m	w
35-40	H	m	m
40-45	H	m	m
	45' Total Bore Depth		
		50% 4/4.5	

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-19-08

WELL NO. DP-01

WELL COORDINATES _____

EXIST. GROUND 834.60

MATERIAL LIST

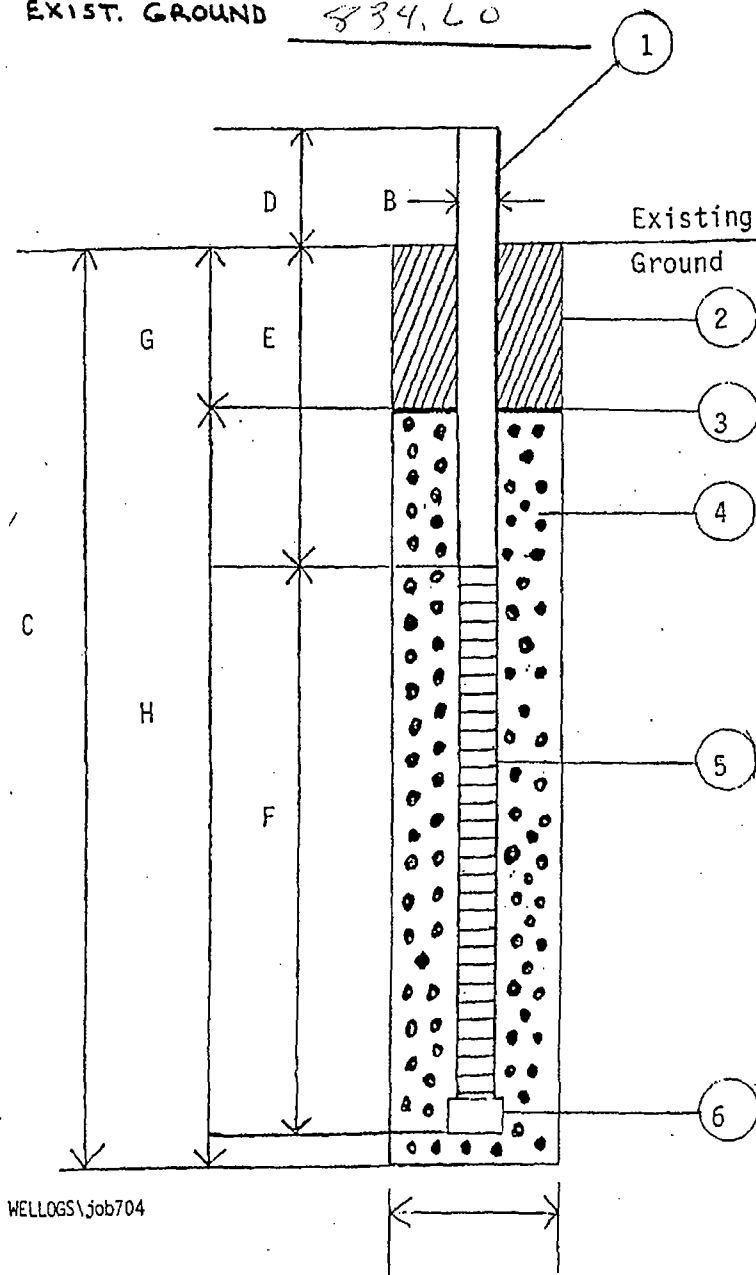
- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>36</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>27</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>29</u> FT. |
| DEPTH TO REFUSE | <u>7</u> FT. |

NOTES: Design Depth 35'

2' Stone Base



WELLOGS\job704

JOB: mig / Drawn

GAS WELL NO.: DP-01

DATE: 11-19-08

EL 834.60

35

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: M. J. Newman JOB SUPERVISOR: S. Small

DAY: ~~Wed~~ Thu. DATE: 11-20-08 WEATHER: City TEMPERATURE: 20²⁵

CUT/SOIL

SOIL MOISTURE: DRY MOIST WET SATURATED

SOIL TYPE: A B C OTHER:

TRENCH WIDTH @ TOP

DEPTH OF TRENCH

COMPACTION TEST

DELAYS, SHORTAGES, PROBLEMS

MATERIAL

EQUIPMENT

LABOR

VERBAL INSTRUCTIONS

INSPECTOR/ENGINEER

OWNER

GENERAL CONTRACTOR

PROJECT MANAGER

DAILY TOTALS

[illegible]

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

GV-36 3.5 Extra Footage
GV-35 3' "
GV-33 6' "

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M. _____

TOOL BOX TALK

SUBJECT:

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

PRODUCTION REPORT

MAIN LINE				STRUCTURES	
LABOR CODE	QUANTITY FEET	LOCATION: S.W. 1/4	R.O.F	NO.	DEPTH
503		17.5	1.5	GV-33	26
503		14.5	14.5	GV-35	22.5
503		15	13	GV-36	21.5
503		12.5	10.5	GV-22	15.5
503		11.5	9.0	GV-29	14.0
503		12.5	10.0	GV-38	15.0

LATERALS			
LABOR CODE	QUANTITY FT:EA	LOCATION:	
503	12.5	8'	GV-25 13
503	12.5	10.5	GV-23 15.5
503	12.5	9.5	GV-26 15.0
503	11.5	10.5	GV-24 15.5

[illegible]

EARTHWORK - DEMOLITION

[illegible]

OFFICE USE ONLY

TODAY'S TOTAL

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GV-24

WELL COORDINATES _____

EXIST. GROUND 816.80

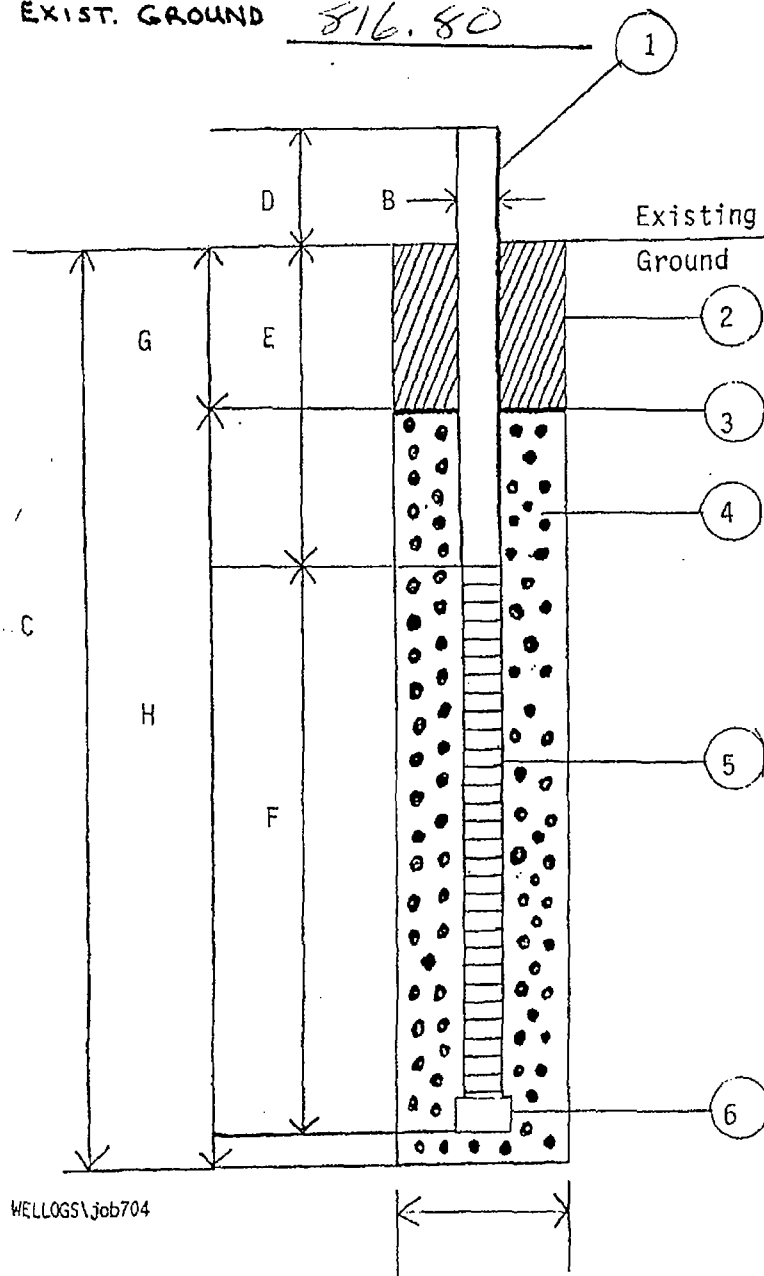
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>15.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>10.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12.5</u> FT.
DEPTH TO REFUSE	<u>2.5</u> FT.

NOTES: _____



JOB: Mig / Demarcado

GAS WELL NO.: GV-241

EL 5/6.50

65, 55

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GV-26

WELL COORDINATES _____

EXIST. GROUND 814.41

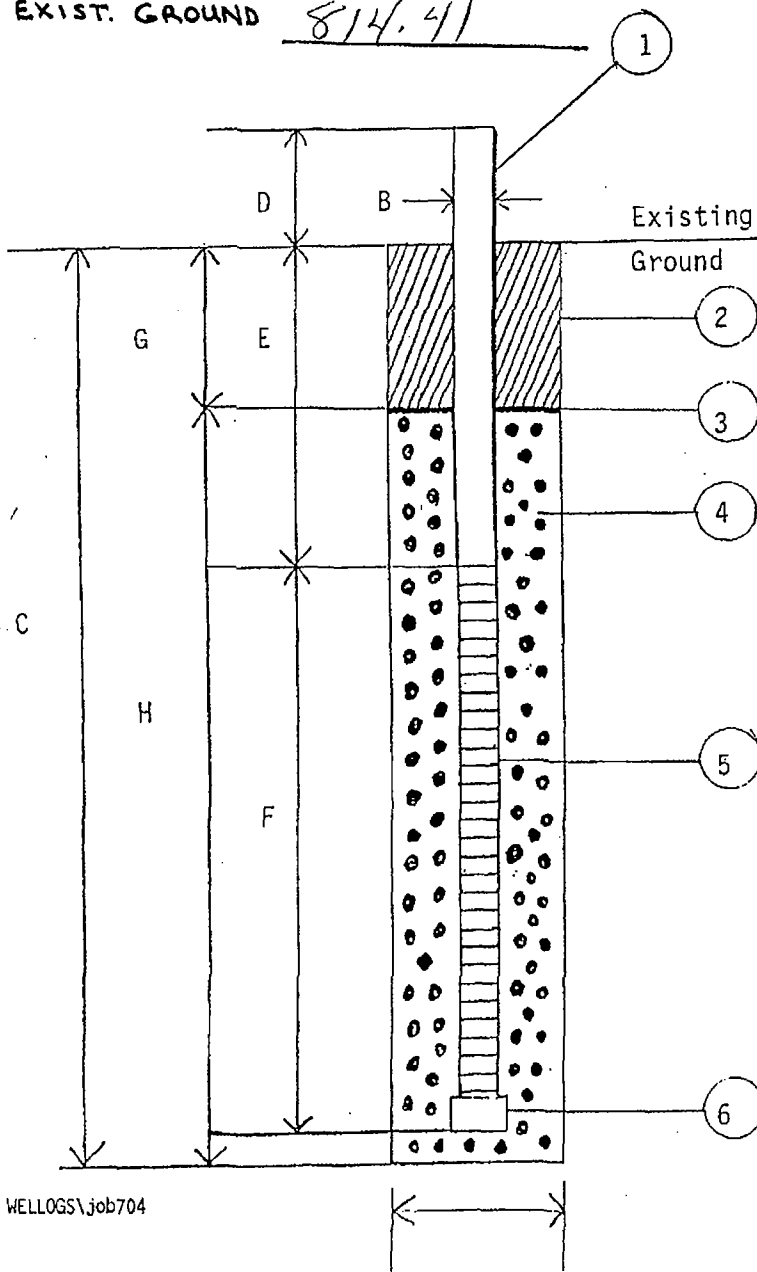
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>15</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>9.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12</u> FT.
DEPTH TO REFUSE	<u>3</u> FT.

NOTES: _____



JOB: Mig / De-Noise

GAS WELL NO.: GV-26

EL - 8/4, 4/1

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-20-08

WELL NO. GK-23

WELL COORDINATES _____

EXIST. GROUND 820.30

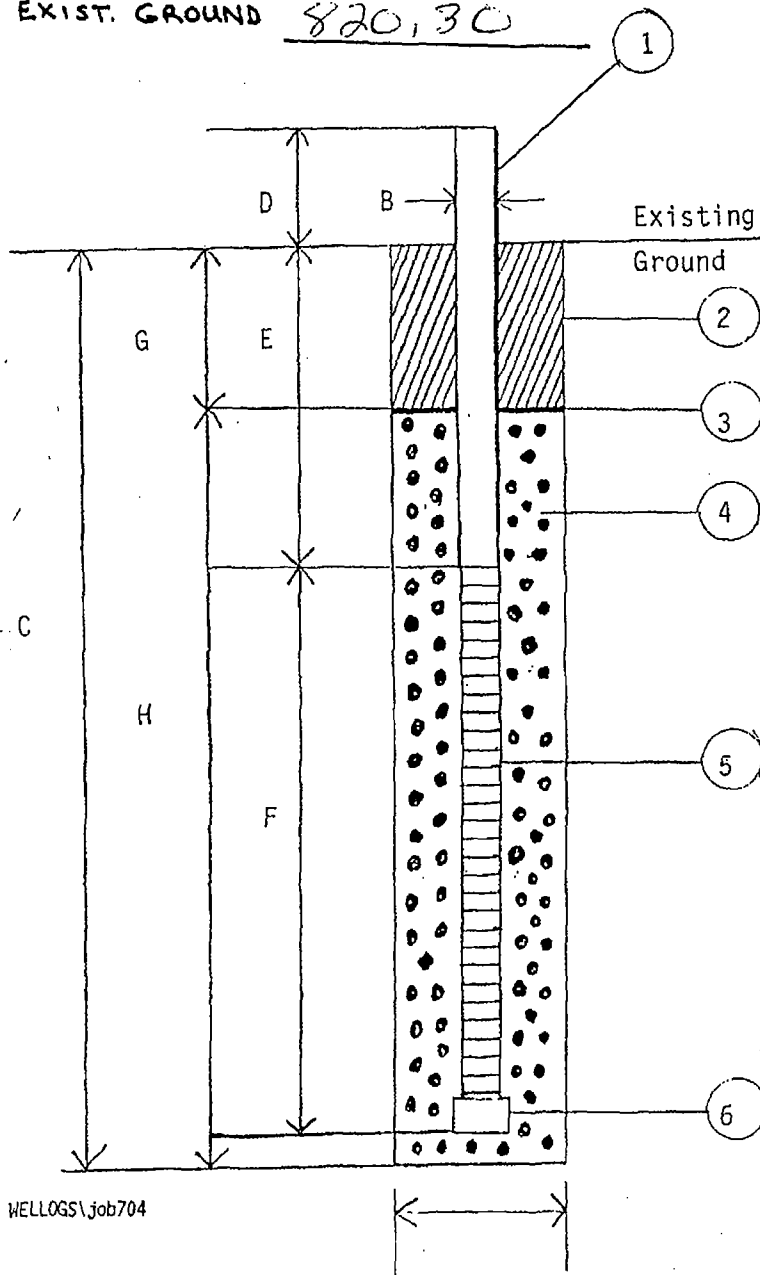
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>10.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12.5</u> FT.
DEPTH TO REFUSE	<u>2</u> FT.

NOTES: _____



JOB: Mig/Dave and

GAS WELL NO.: GV-23

EL-820-30

155

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GV-25

WELL COORDINATES _____

EXIST. GROUND 811.60

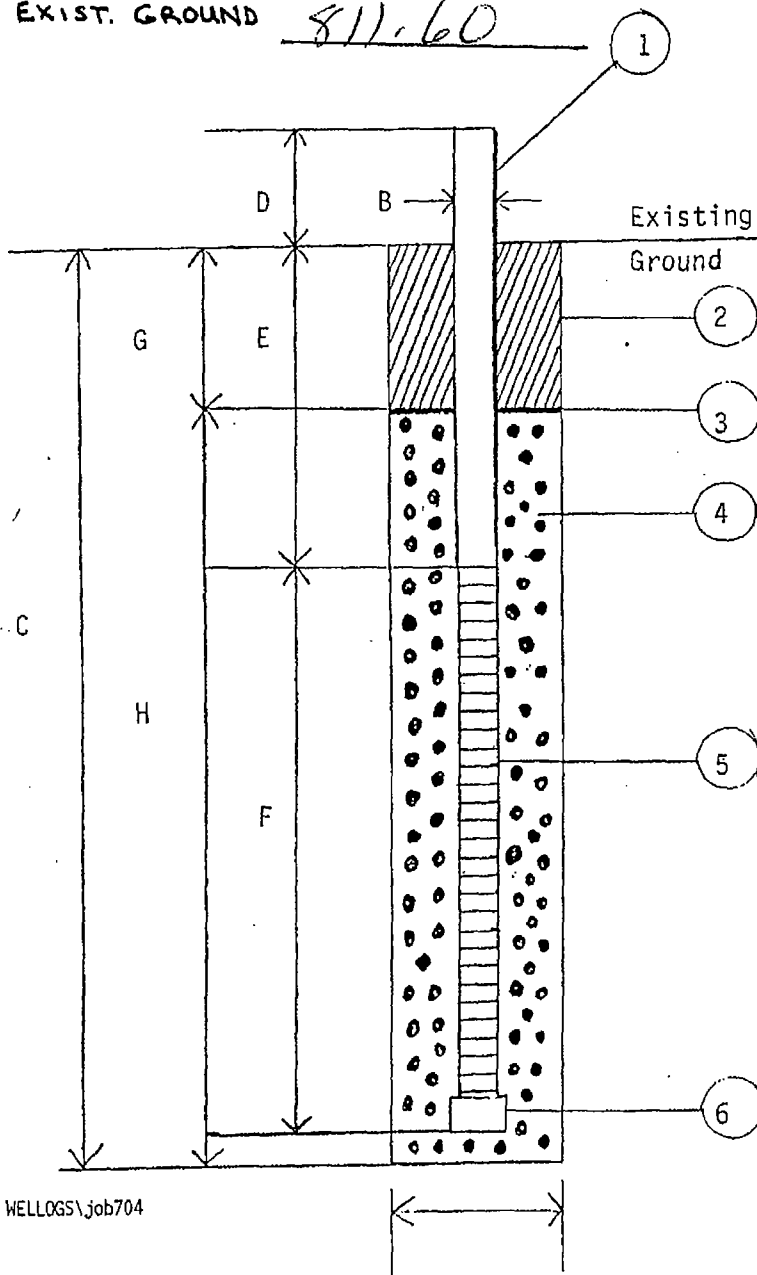
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>8</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>10</u> FT.
DEPTH TO REFUSE	<u>3</u> FT.

NOTES: _____



JOB: Mig/Dwain

GAS WELL NO.: 6U-25

EL 811,60

13

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GK-38

WELL COORDINATES _____

EXIST. GROUND 817.38

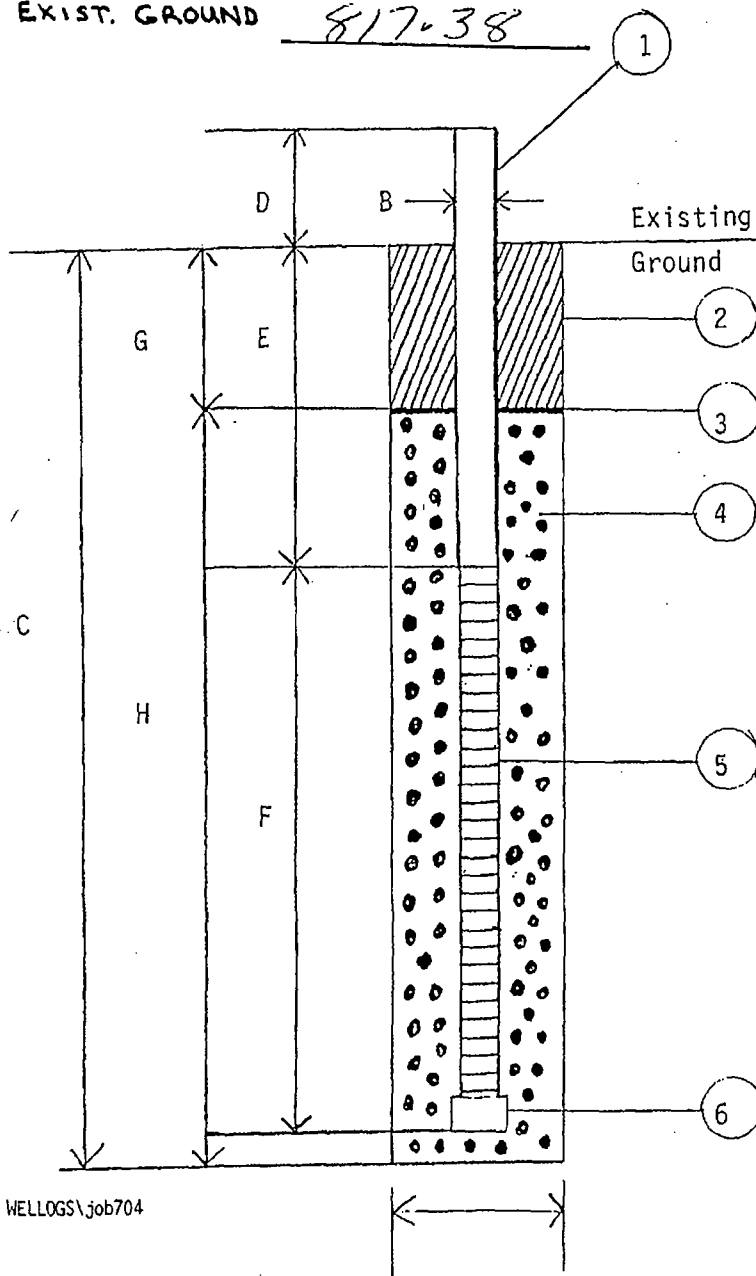
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>15</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5</u> FT.
F) SLOTTED PIPE LENGTH	<u>10</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12</u> FT.
DEPTH TO REFUSE	<u>2</u> FT.

NOTES: _____



JOB: M: g / Ruano

GAS WELL NO.: GV-38

EL-817.38

15

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GV-29

WELL COORDINATES _____

EXIST. GROUND 817.10

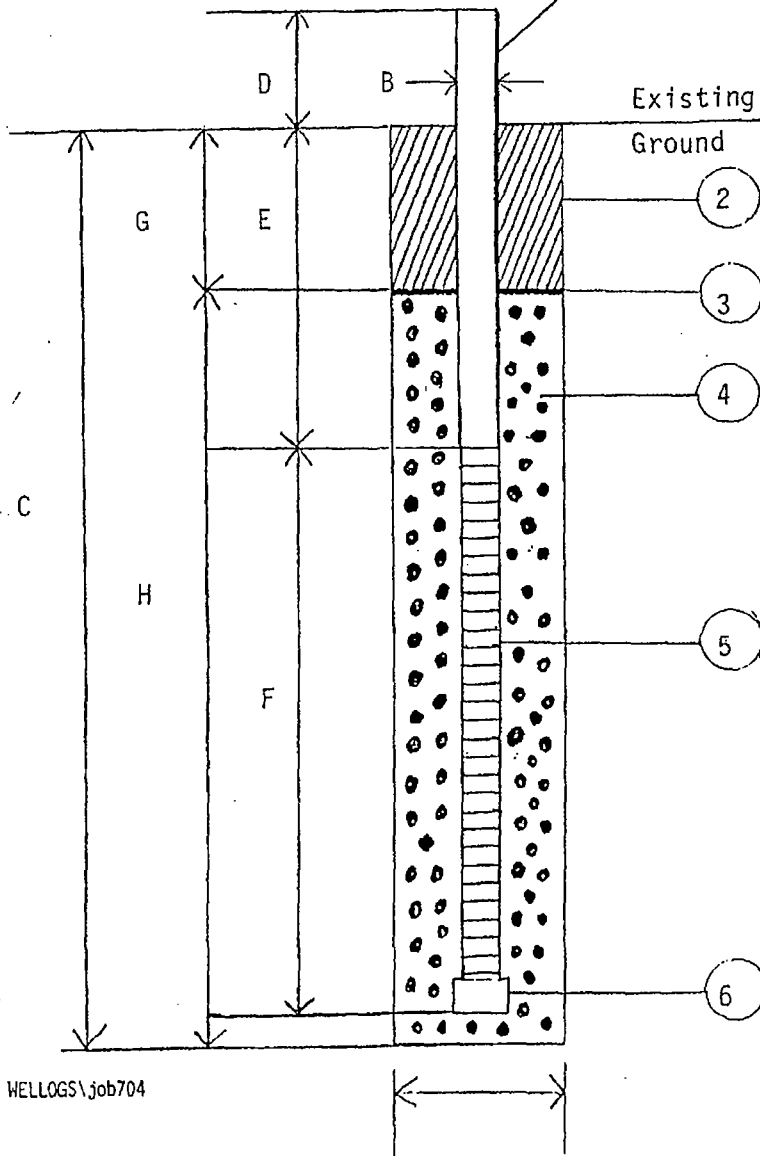
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>14</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>9</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>11</u> FT.
DEPTH TO REFUSE	<u>2.5</u> FT.

NOTES: _____



JOB: Mig / Power

GAS WELL NO.: GV-29

EL 817.10

14.

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GV-22

WELL COORDINATES _____

EXIST. GROUND 817.30

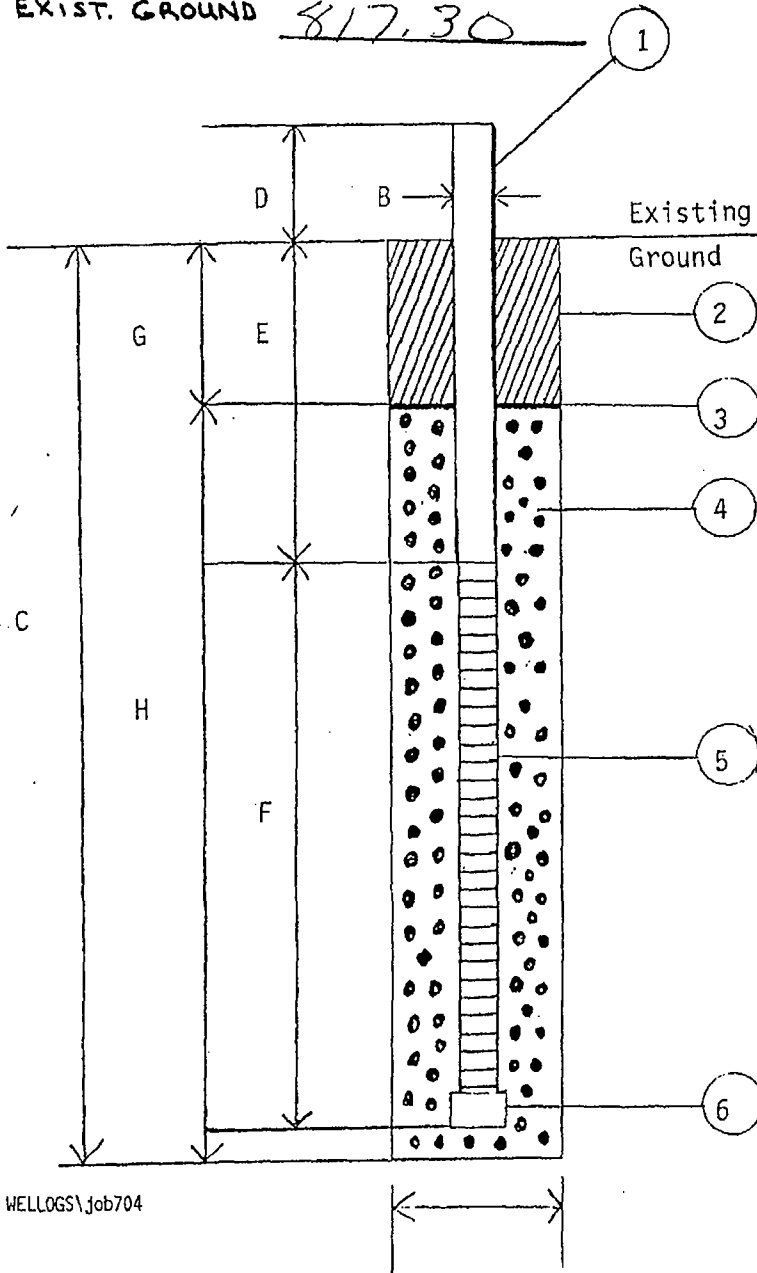
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>15.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5</u> FT.
F) SLOTTED PIPE LENGTH	<u>10.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12.5</u> FT.
DEPTH TO REFUSE	<u>2</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig Dawson

GAS WELL NO.: CU-22

DATE: 11-20-08

EL-817.30

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 10-20-08

WELL NO. GV-36

WELL COORDINATES _____

EXIST. GROUND 831.30

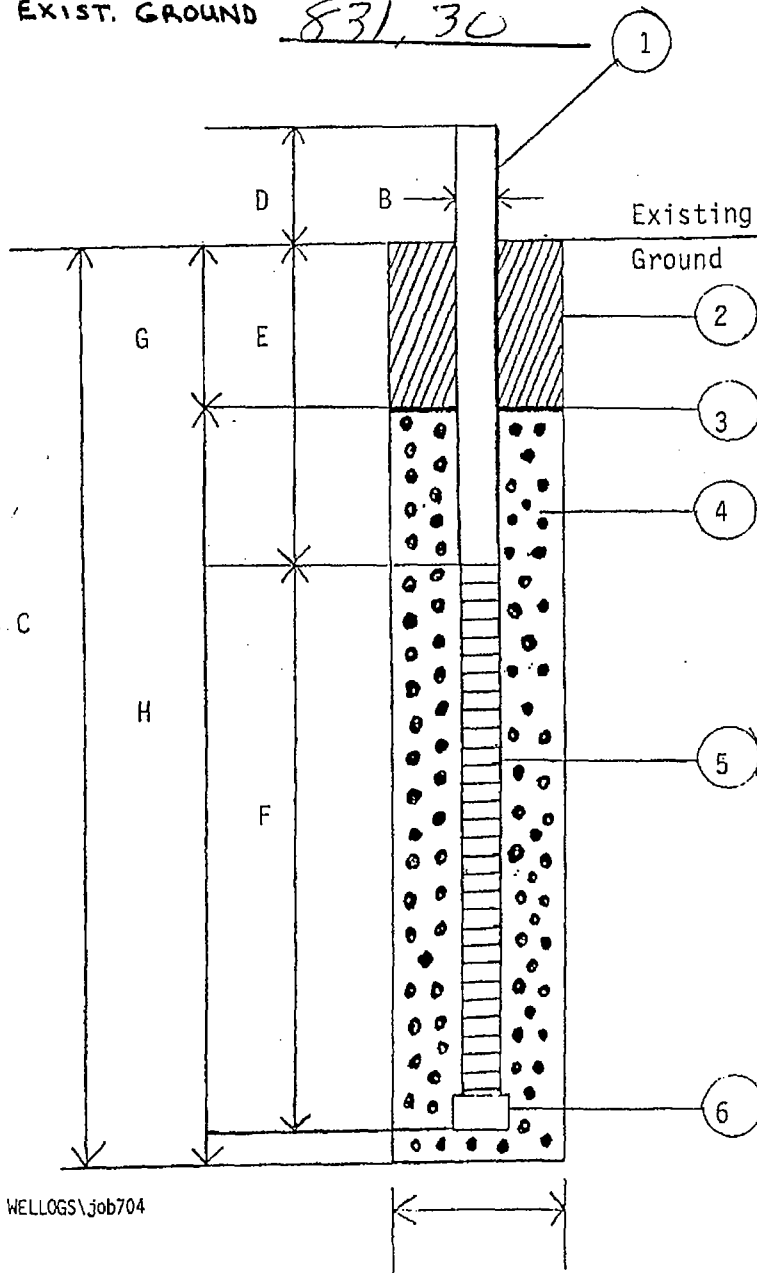
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>21.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>7.5</u> FT.
F) SLOTTED PIPE LENGTH	<u>13</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>19.5</u> FT.
DEPTH TO REFUSE	<u>6</u> FT.

NOTES: Drilled 3.5"
Thru Plane Depth



JOB: Mig/Perkins

GAS WELL NO.: GV-36

DATE: 11-20-08

EL 831.30

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-20-08

WELL NO. GK-35

WELL COORDINATES _____

EXIST. GROUND 833.60

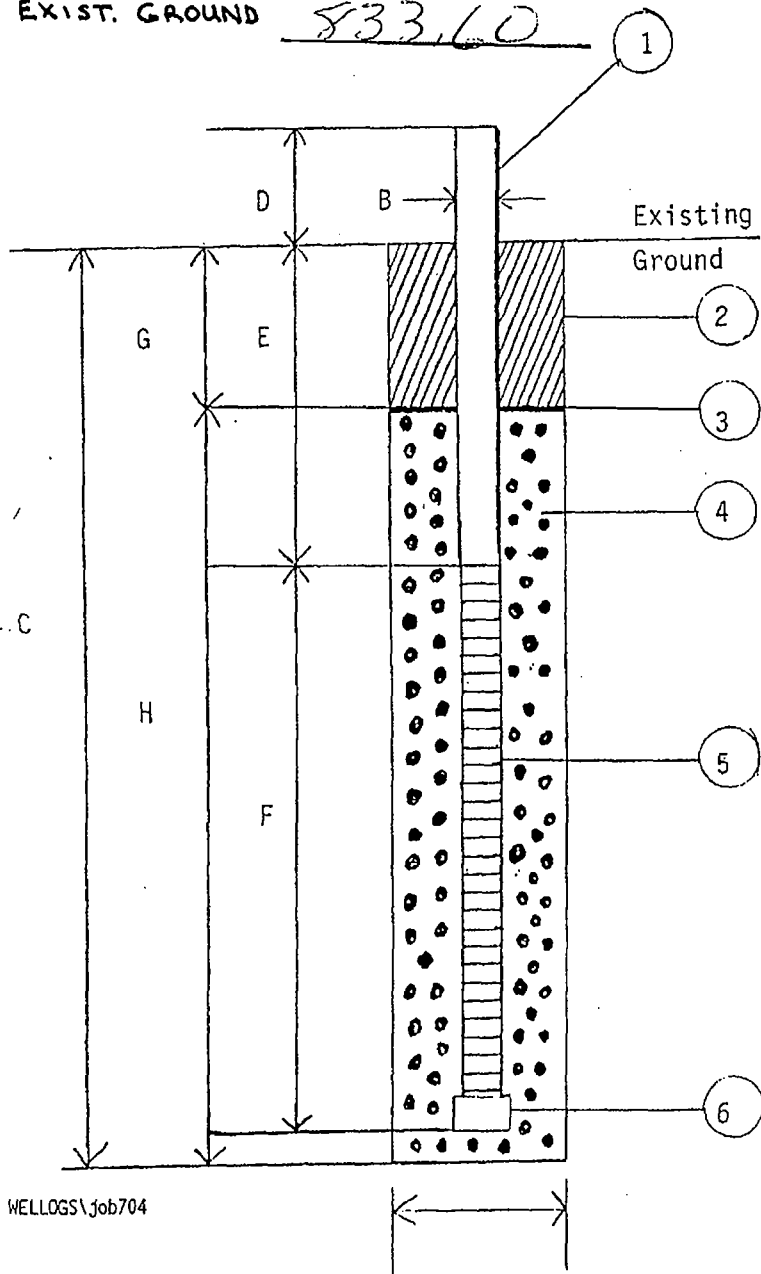
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>6</u> IN. |
| C) BORE DEPTH | <u>22.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7.0</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>14.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>3</u> FT. |
| H) WASHED STONE PACK | <u>19.5</u> FT. |
| DEPTH TO REFUSE | <u>6.5</u> FT. |

NOTES: Drilled 3'
Deeper than Plan



JOB: Mig/Occurrence

GAS WELL NO.: GV-35

EL-833-60

19.5

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-20-08

WELL NO. GK-33

WELL COORDINATES _____

EXIST. GROUND 834.50

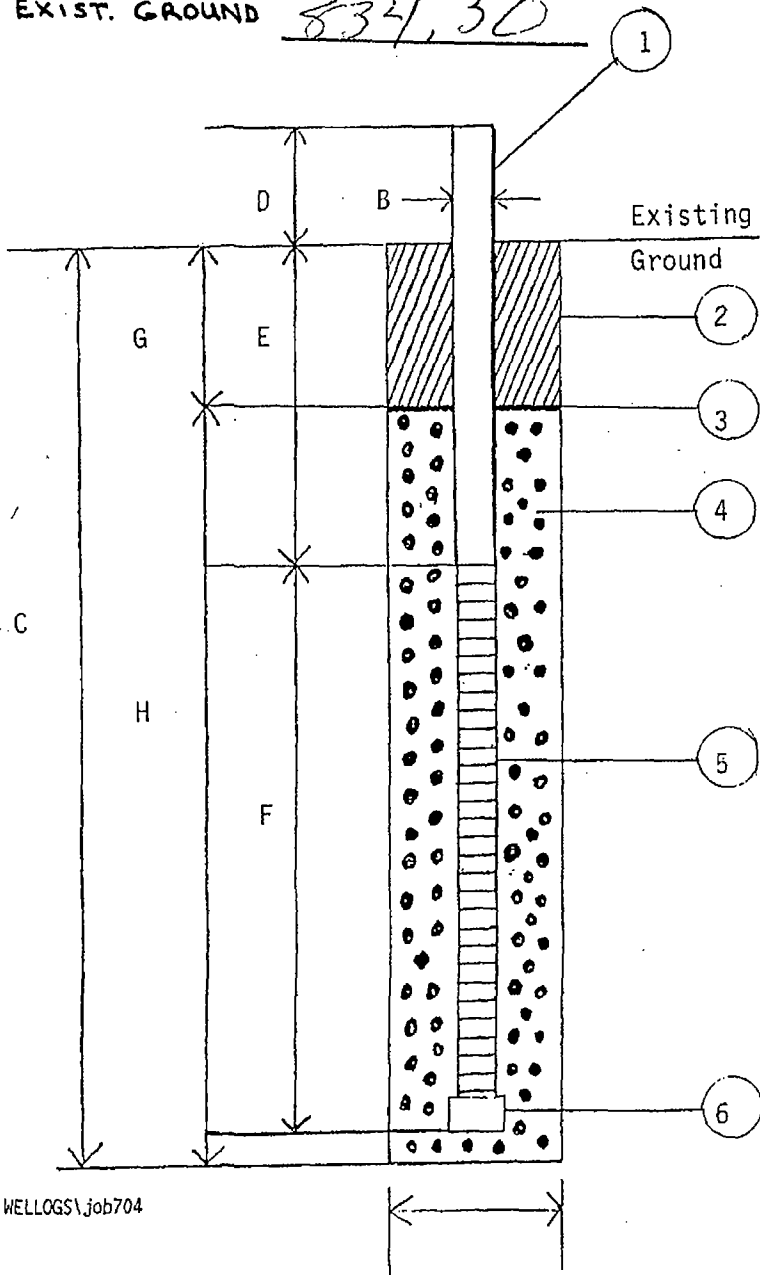
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>26</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>10</u> FT.
F) SLOTTED PIPE LENGTH	<u>15</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>23</u> FT.
DEPTH TO REFUSE	<u>10</u> FT.

NOTES: Extra 6'
of Drilling



JOB: mg / Nussance

GAS WELL NO.: GV-33

DATE: 11-20-08 EL-834.50

26

01/94

01/94

DAILY REPORT

JOB NO. 485C JOB NAME: Mig / Hwano JOB SUPERVISOR: S. Smith

DAY: ~~THU~~ FRI DATE: 11-21-2015 WEATHER: 74° / 16° TEMPERATURE: 20°C / 70°F

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. P.M.

SUBJECT:

☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

SUBJECT:

PRODUCTION REPORT

MAIN LINE				STRUCTURES	
LABOR CODE	QUANTITY FEET	LOCATION:		NO.	DEPTH
503		14	8.0	GL-19	14
503		12.5	11.5	GL-21	16.5
503		11.5	13.0	GL-20	18.0
501		14.5	25.5	AP-16	33.5

LATERALS		
LABOR CODE	QUANTITY FT:EA	LOCATION:

FINISH GRADING			FOOTING EXCAVATION			FOOTING BACKFILL		
LABOR CODE	QUANTITY STA:SF	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION

EARTHWORK - DEMOLITION

LABOR CODE												
MACHINE	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY

OFFICE USE ONLY

TODAY'S TOTAL

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-21-08

WELL NO. GV-20

WELL COORDINATES _____

EXIST. GROUND 817.80

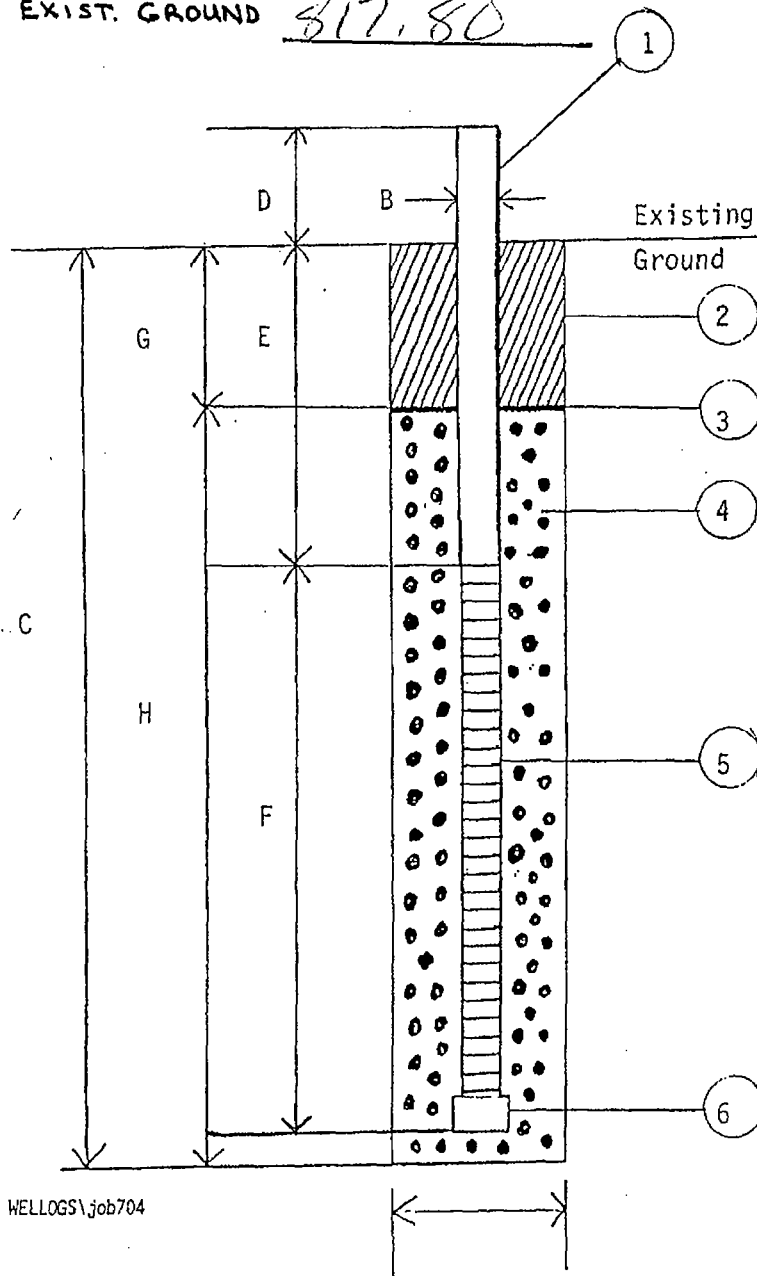
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>18</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>13</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>15</u> FT.
DEPTH TO REFUSE	<u>7.5</u> FT.

NOTES: _____



JOB: mig/Down
GAS WELL NO.: GV-20

GAS WELL NO.: GV-20

DATE: 11-21-08

EL- 817.50

19 Total
Bon. Profit

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-21-08

WELL NO. GV-21

WELL COORDINATES _____

EXIST. GROUND 824.60

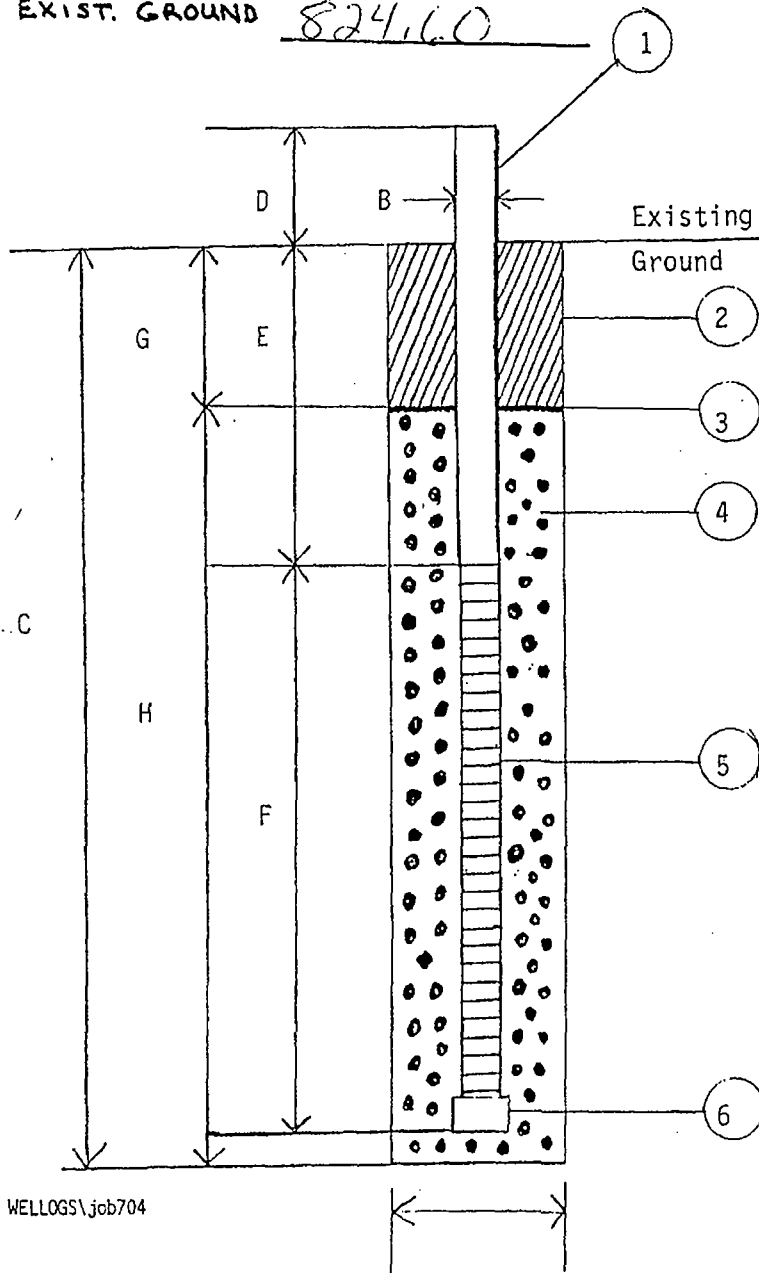
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>6</u> IN. |
| C) BORE DEPTH | <u>16.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5.0</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>11.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>3</u> FT. |
| H) WASHED STONE PACK | <u>13.5</u> FT. |
| DEPTH TO REFUSE | <u>3</u> FT. |

NOTES: _____



JOB: Mid/Dance

GAS WELL NO.: GV-21

FL - 824.60

16.5

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-21-08

WELL NO. OP-16

WELL COORDINATES _____

EXIST. GROUND 822.50

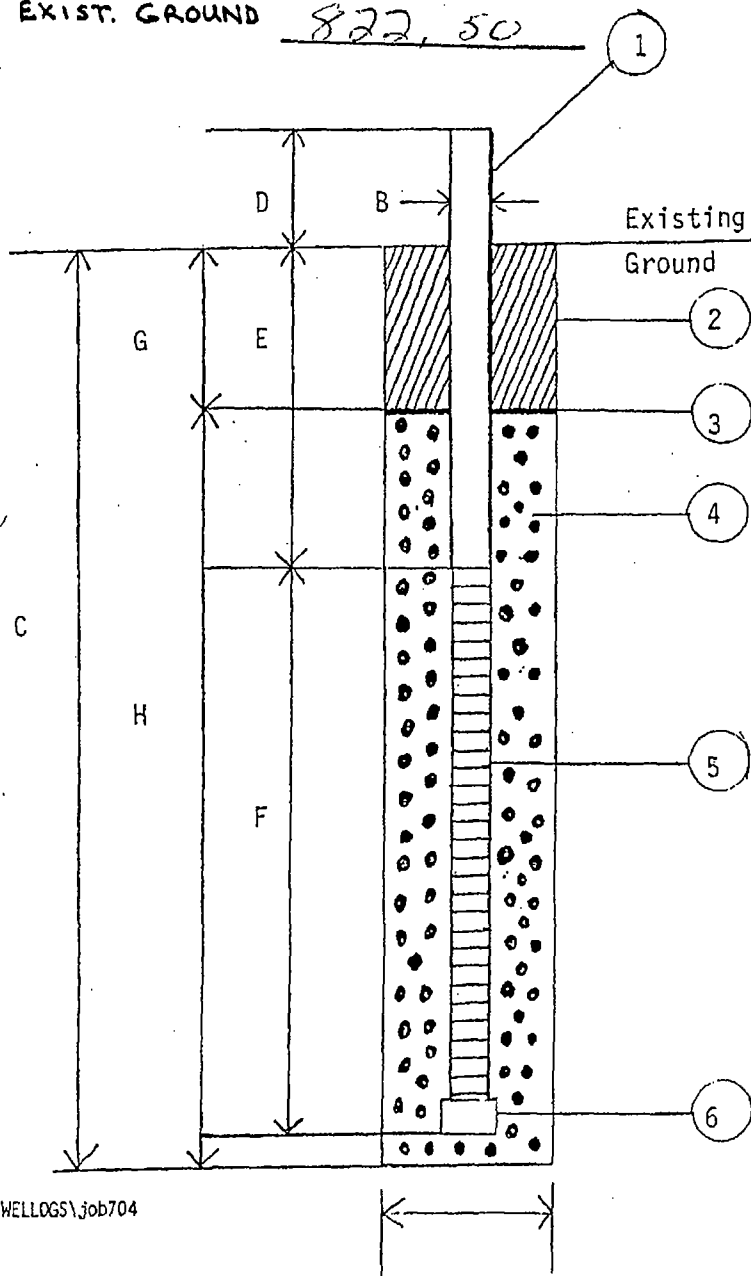
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>33.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7.0</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>25.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>28.5</u> FT. |
| DEPTH TO REFUSE | <u>4</u> FT. |

NOTES: _____



JOB: Mig / Down DP-16
GAS WELL NO. ~~22~~

GAS WELL NO.: ~~23456~~

EL-822.50

33.5

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-21-08

WELL NO. GK-19

WELL COORDINATES _____

EXIST. GROUND 809.50

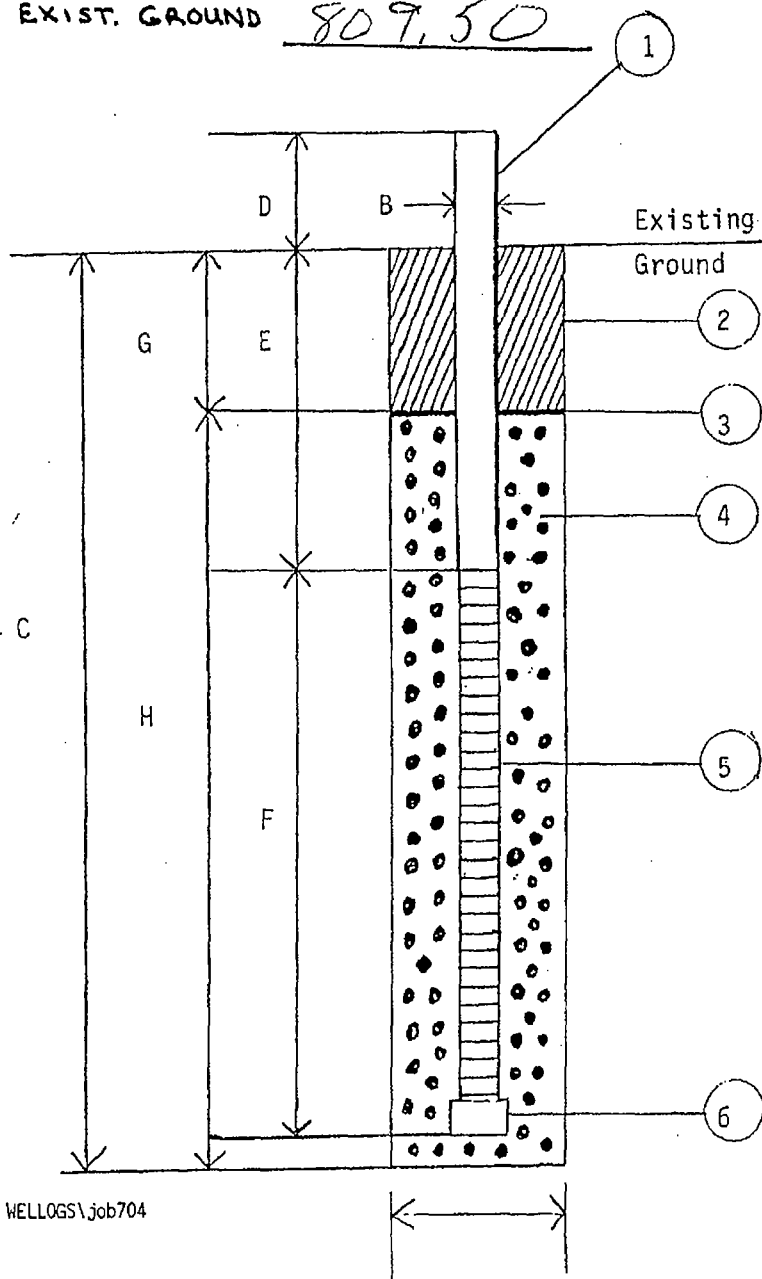
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>14</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>11</u> FT.
DEPTH TO REFUSE	<u>3.5</u> FT.

NOTES: Drilled 1' Extra
Didn't Add Pipe Just
more Rock



JOB: Mig / P-was

GAS WELL NO.: GV-19

DATE: 11-21-08

EL - 809.50

13

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: M. J. Newman L.F. JOB SUPERVISOR: S. Smith

DAY: Tue DATE: 11/11/08 WEATHER: Cloudy TEMPERATURE: 30°

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	D. King	4019	3.5
		102	D. King	3003	3.5
SOIL MOISTURE: DRY MOIST WET SATURATED		102	3003	6059	10
SOIL TYPE: A B C OTHER:		629	H. Kl. ...	X	10.0
TRENCH WIDTH @ TOP		DEPTH OF TRENCH			
COMPACTION TEST		XXXXXXXXXX			
		XXXXXXXXXX			
<u>DELAYS, SHORTAGES, PROBLEMS</u>		195	S. Smith	Foot Lift	
		195	S. Smith	3715	
MATERIAL					
EQUIPMENT					
LABOR					
<u>VERBAL INSTRUCTIONS</u>					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Unloaded Pipe - Unloaded Bentonite
Rock was not increased
met with Gaspytes - BFI
CBM - 5.5 mc - Had softy met.
Preconstruction meeting
+ Drilled 2 wells

☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M.

SUBJECT: _____

☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

SUBJECT:

11/11/08

MAIN LINE			STRUCTURES	
LABOR CODE	QUANTITY FEET	LOCATION:	NO.	DEPTH
503		Solid Pipe	SV-14	18'
		12.5	13	
503		12.5	SV-16	18'

[illegible][illegible]

EARTHWORK - DEMOLITION

[illegible]

OFFICE USE ONLY

TODAY'S TOTAL

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-11-08

WELL NO. GV-16

WELL COORDINATES _____

EXIST. GROUND 804.40

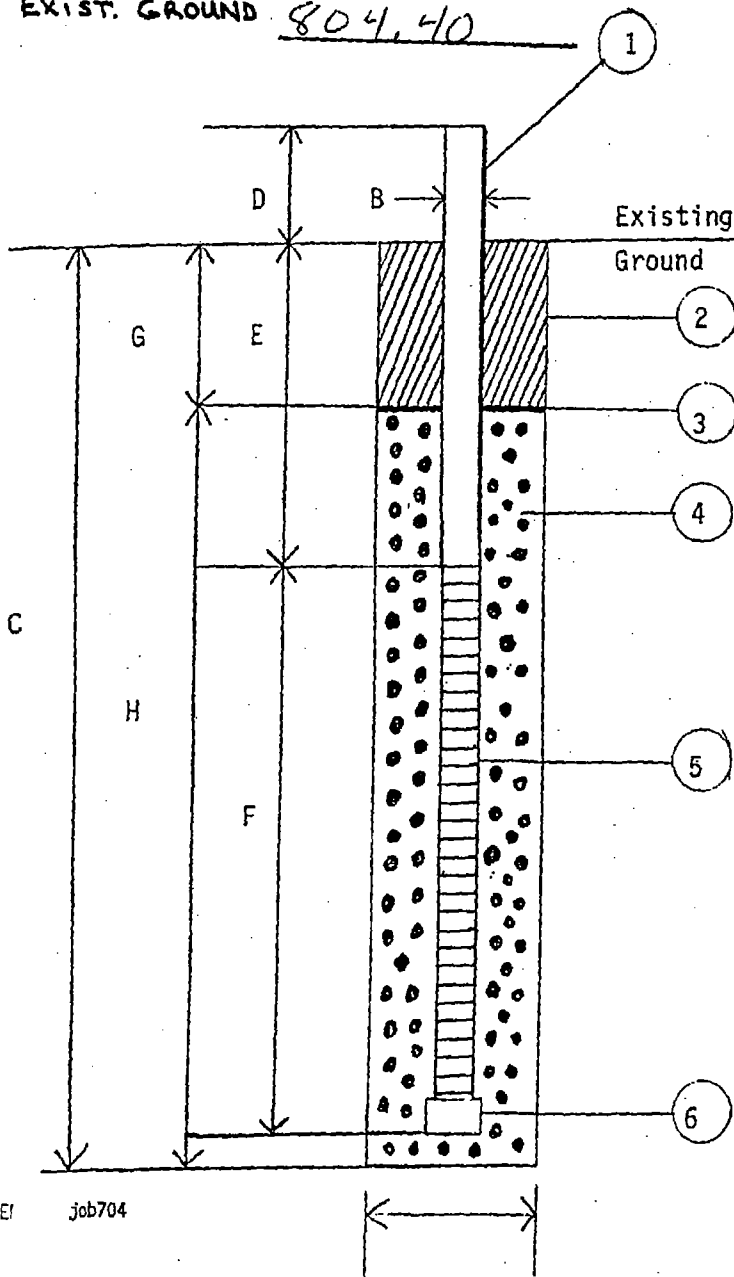
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>18</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5</u> FT.
F) SLOTTED PIPE LENGTH	<u>13</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>15</u> FT.
DEPTH TO REFUSE	<u>3.5</u> FT.

NOTES: _____



JOB: Mig / Demarcation LF
GAS WELL NO.: GV-16
DATE: 11-11-08

DATE: 11-11-08

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC/DEWANE

DRILLING DATE 11-11-08

WELL NO. GV-14

WELL COORDINATES _____

EXIST. GROUND 811.10

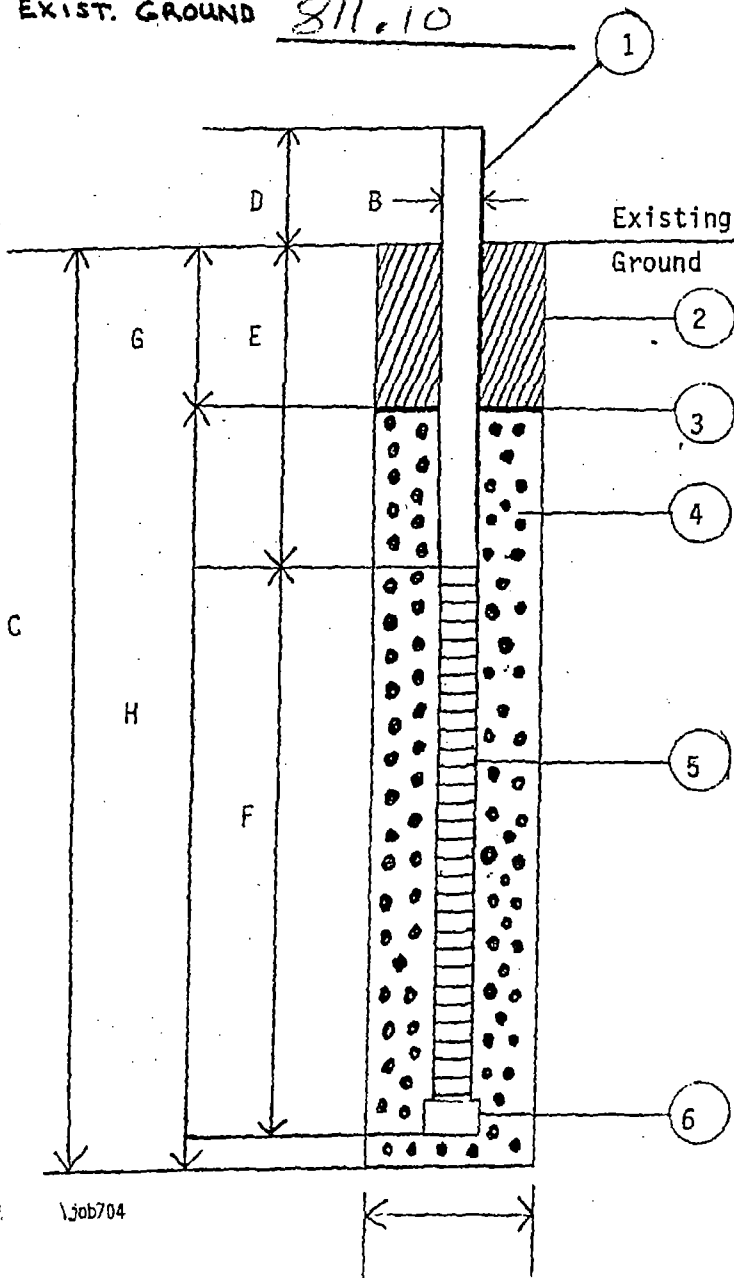
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED ~~PIPE~~
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>18</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>5</u> FT.
F) SLOTTED PIPE LENGTH	<u>13</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>15</u> FT.
DEPTH TO REFUSE	<u>3.5</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: MIG/Dewar

GAS WELL NO.: GV-14

DATE: 11-11-08

[illegible]

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880

JOB NAME: Mig/Durham F.

JOB SUPERVISOR: S. Smith

DAY: Wed

DATE: 11-12-08 WEATHER: Rain

TEMPERATURE: 40°S

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	D. King	4019	5.0
		102	"	6059	1.0
SOIL MOISTURE: DRY MOIST WET SATURATED		102	"	3003	1.5
SOIL TYPE: A B C OTHER:		1029	K. Klouner	x	8.5
TRENCH WIDTH @ TOP DEPTH OF TRENCH		195	S. Smith	3713	8.5
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Drilled & Installed 2
DP-wells

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

PRODUCTION REPORT

11/12/08

MAIN LINE				STRUCTURES	
LABOR CODE	QUANTITY FEET	LOCATION:		NO.	DEPTH
500		14.5	33'	DP-12	41.4
501		14.5	41.5	DP-13	49.5

LATERALS		
LABOR CODE	QUANTITY FT:EA	LOCATION:

FINISH GRADING			FOOTING EXCAVATION			FOOTING BACKFILL		
LABOR CODE	QUANTITY STA:SF	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION	LABOR CODE	QUANTITY FT:EA	LOCATION

EARTHWORK - DEMOLITION

LABOR CODE												
MACHINE	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY	LDS	CY/LD	TOTAL CY

OFFICE USE ONLY

TODAY'S TOTAL

FORMS\daily.rpt

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-12-08

WELL NO. DP-13

WELL COORDINATES _____

EXIST. GROUND 839.30

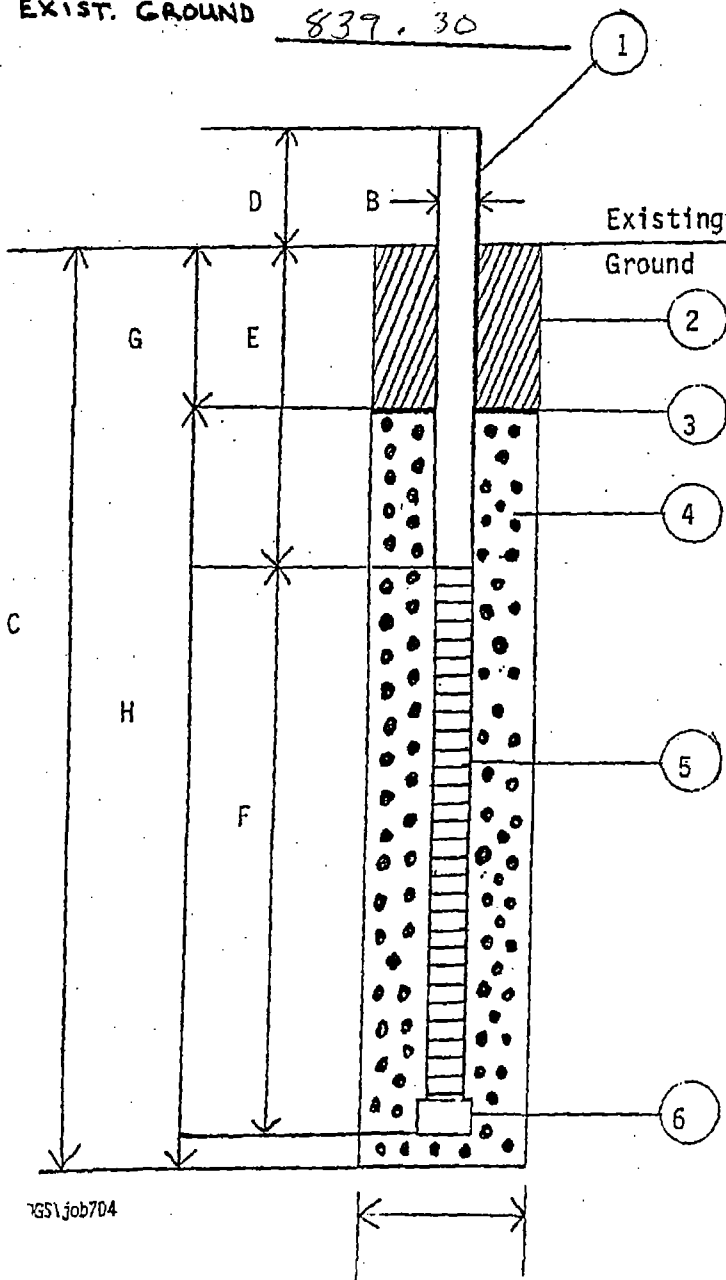
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>49.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>41 1/2</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>44.5</u> FT. |
| DEPTH TO REFUSE | _____ FT. |

NOTES: _____



JOB: Mid Distance L.F.

GAS WELL NO.: AP-13

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-12-08

WELL NO. DP-12

WELL COORDINATES _____

EXIST. GROUND 836.10

MATERIAL LIST

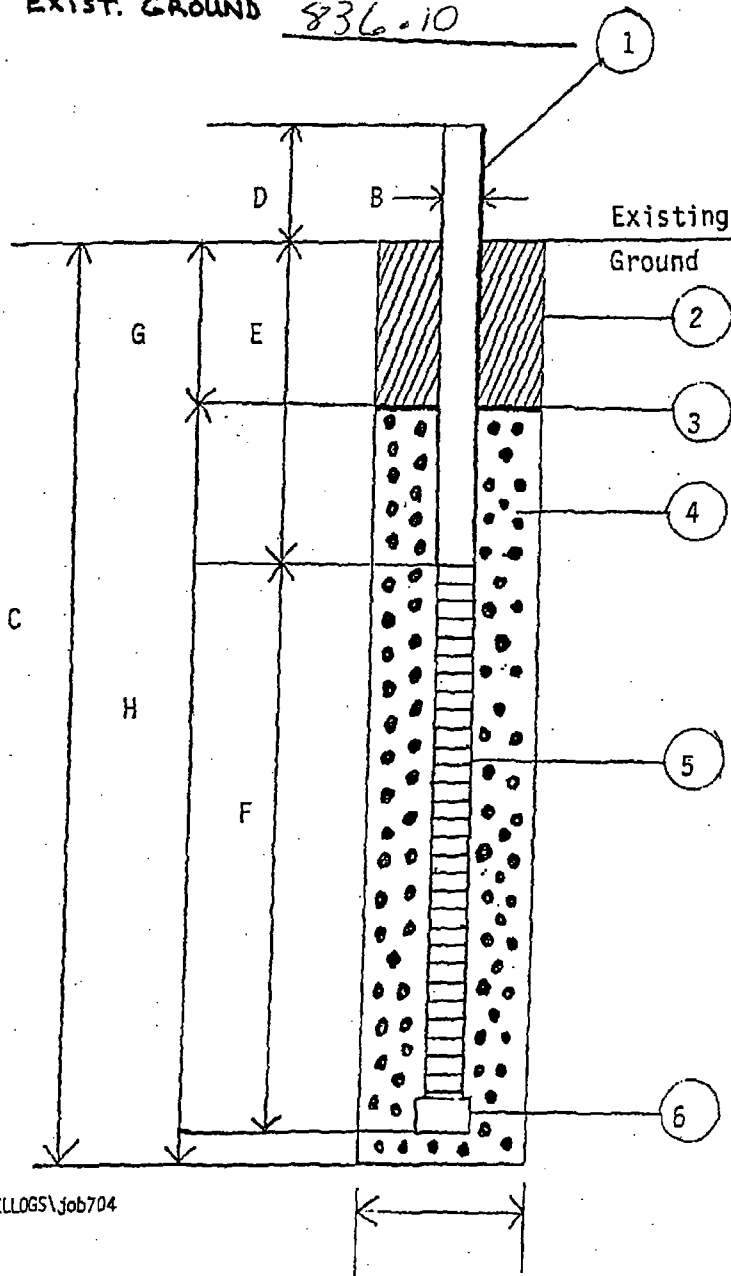
- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED ~~440" PIPE~~
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>44</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>36</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>39.3</u> FT. |
| DEPTH TO REFUSE | <u>11</u> FT. |

NOTES: 1' Bentonite TM Bore

Hole Bottom



JOB: Mig / Demolition

GAS WELL NO.: DP-12

DATE: 11-12-08

[illegible]

DAILY REPORT

JOB NO. 880

JOB NAME: mig/Anusane LK JOB SUPERVISOR: S. Smith

DAY: Fri

DATE: 11-14-08 WEATHER: Cloudy TEMPERATURE: 30°s

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	D. King	X	8.0
		629	K. K. L...	X	8.0
SOIL MOISTURE: DRY MOIST WET SATURATED		195	S. Smith	X	8.0
SOIL TYPE: A B C OTHER:					
TRENCH WIDTH @ TOP					
DEPTH OF TRENCH					
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Worked on putting GU-wells together

unloaded 100' Pipe 6"

that was delivered 1 pipe

Had Damage Noted on Delivery

Slip

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
- ☐ MAINTENANCE DECAL
- ☐ SERVICE NEEDS REPORTED
- ☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: Mig/Dewan LF JOB SUPERVISOR: S. Smith
 DAY: Mon DATE: 11-21-08 WEATHER: Snow Early TEMPERATURE: 30°s to 40°s

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		345	G. W. Hington	6059	9.5
		629	K. K. Hutton	4150	9.5
SOIL MOISTURE: DRY MOIST WET SATURATED		102	D. King	4019	8.0
SOIL TYPE: A B C OTHER:		102	D. King	3003	2.0
TRENCH WIDTH @ TOP	DEPTH OF TRENCH	195	S. Smith	3715	10.5
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Drill 2 DP-wells + 2 GV-wells15' Extra Drilling onGV wells

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-24-08

WELL NO. DP-08

WELL COORDINATES _____

EXIST. GROUND 840.10

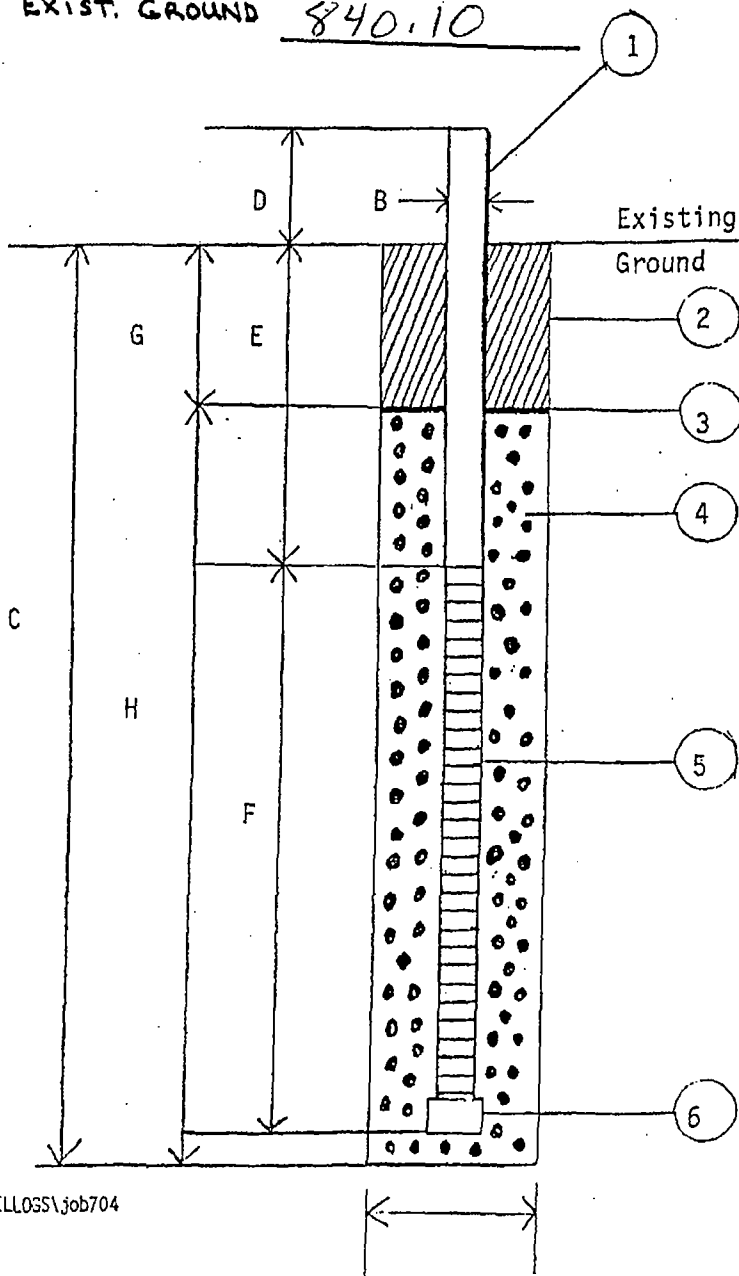
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>46</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>6.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>38</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>41</u> FT.
DEPTH TO REFUSE	<u>10</u> FT.

NOTES: _____



JOB: Mig/Awance

GAS WELL NO.: DP-8

EL-840.10

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-24-08

WELL NO. DP-9

WELL COORDINATES _____

EXIST. GROUND 840.70

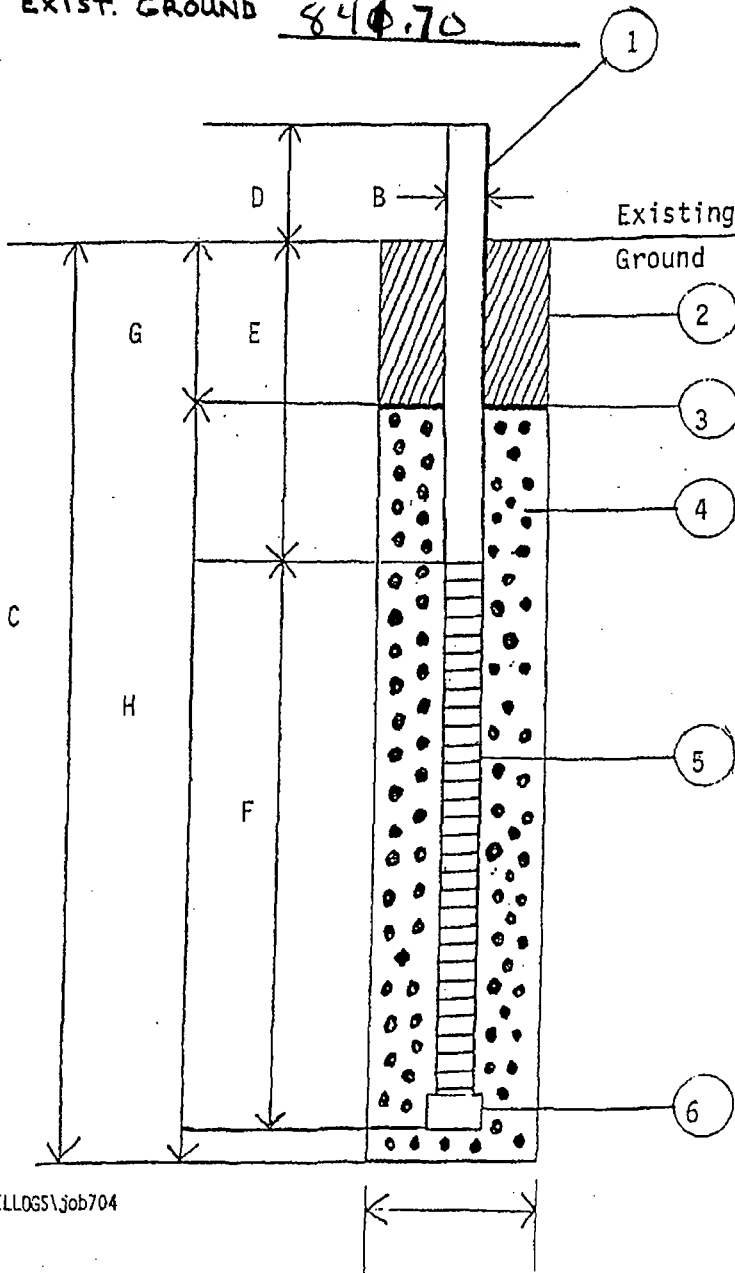
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>50.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>2.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>2</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>212.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>45.5</u> FT. |
| DEPTH TO REFUSE | <u>10</u> FT. |

NOTES: _____



JOB: Mr. Dewar

GAS WELL NO.: DP-9

EL - 841.70

50.5	Total Bore Depth
------	------------------

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-24-08

WELL NO. GV-34

WELL COORDINATES _____

EXIST. GROUND 842.20

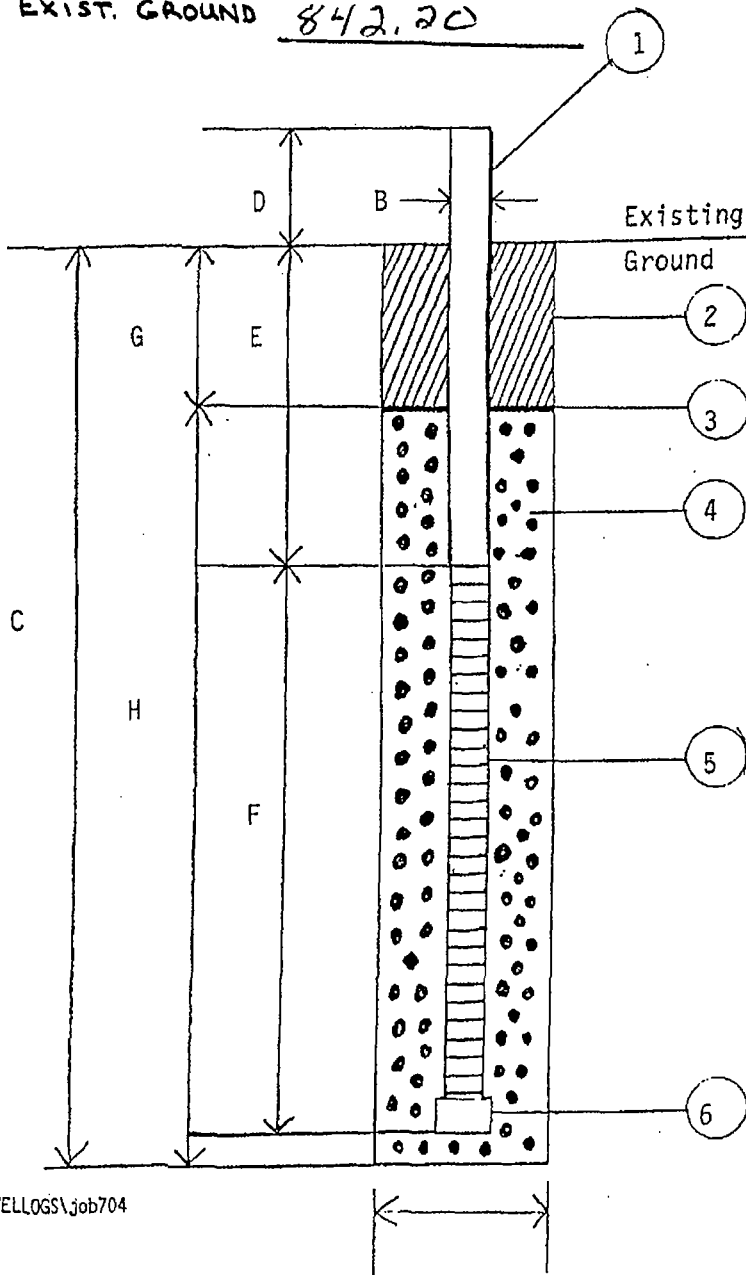
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>37</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>15.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>21</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>34</u> FT.
DEPTH TO REFUSE	<u>14</u> FT.

NOTES: Extend 11' of Drilling
Due to Cover Dirt



GAS EXTRACTION WELL LOGS

JOB: Mig/Overance

GAS WELL NO.: GV-34

DATE: 11-24-08 EL-842.20

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC DEWANE

DRILLING DATE 11-24-08

WELL NO. GL-30

WELL COORDINATES _____

EXIST. GROUND 836-80

MATERIAL LIST

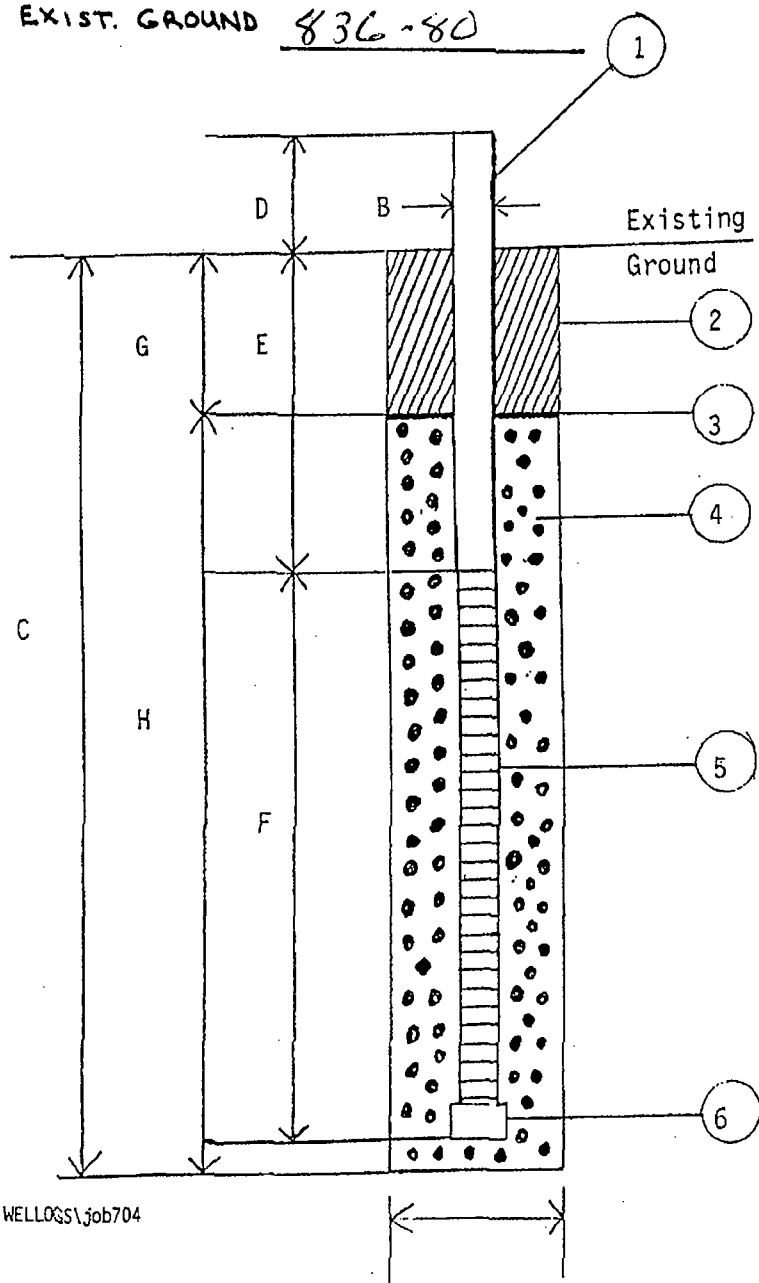
- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>24.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>8</u> FT.
F) SLOTTED PIPE LENGTH	<u>15.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>21.5</u> FT.
DEPTH TO REFUSE	<u>7</u> FT.

NOTES: _____

Drill 4' Extra Per
Extra Cover Depth



GAS EXTRACTION WELL LOGS

JOB: Mig Dewartha

GAS WELL NO.: GV-30

DATE: 11-24-08

EL-836.80

[illegible]

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880

JOB NAME: Mig / Duvane

JOB SUPERVISOR: S. Smith

DAY: Tue

DATE: 11-25-08 WEATHER: Clear TEMPERATURE: 30° S

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		345	G. W. Hingston	6039	10.5
		629	H. Klavert	4150	10.5
SOIL MOISTURE: DRY MOIST WET SATURATED		102	D. King	3003	1.5
SOIL TYPE: A B C OTHER:		102	D. King	4019	9.5
TRENCH WIDTH @ TOP	DEPTH OF TRENCH	195	S. Smith	3715	11.0
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

GAS EXTRACTION WELL DESIGN/AS-BUILT

MIG / DEWANE

SITE _____

DRILLING DATE 11-25-08

WELL NO. GK-31

WELL COORDINATES _____

EXIST. GROUND 829.20

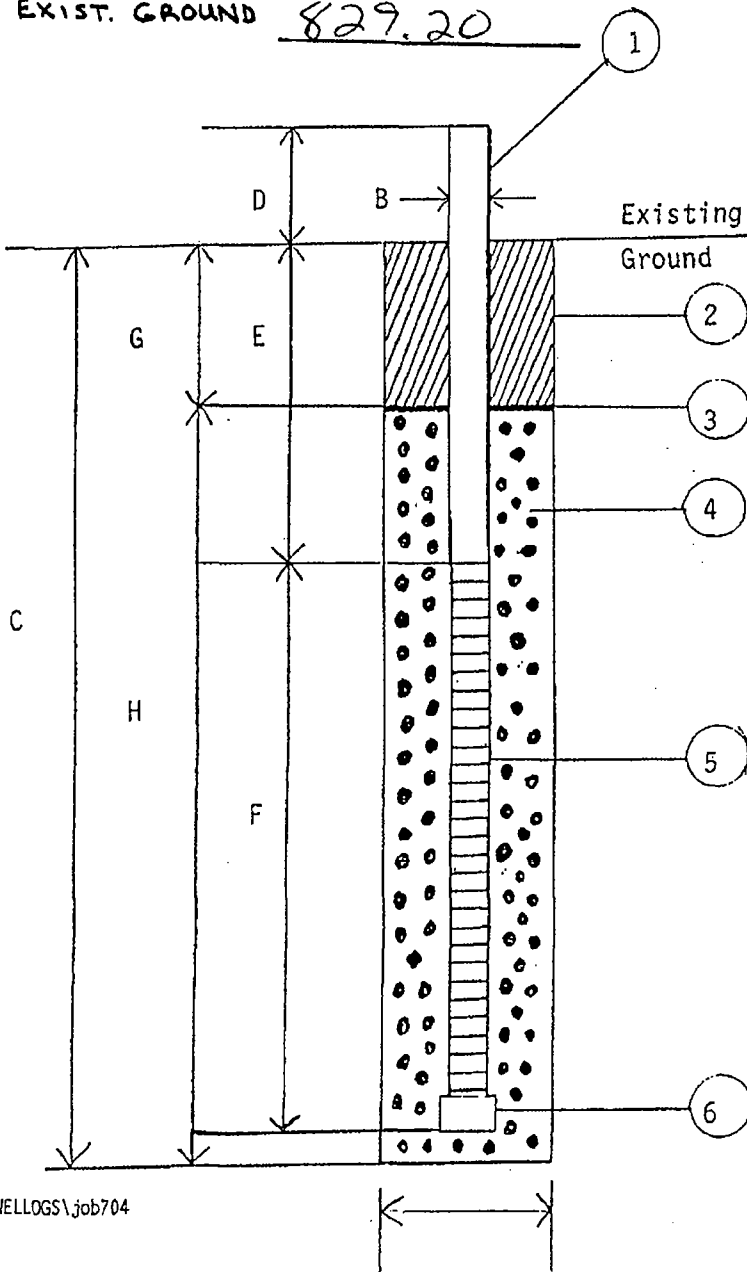
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>25</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>11.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>13</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>22</u> FT.
DEPTH TO REFUSE	<u>10</u> FT.

NOTES: 7' Extra Drilling



JOB: Mig / Swaper

DATE: 11-25-08

EL. 829.20

18

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC DEWANE

DRILLING DATE 11-25-08

WELL NO. _____

WELL COORDINATES _____

EXIST. GROUND 794.40

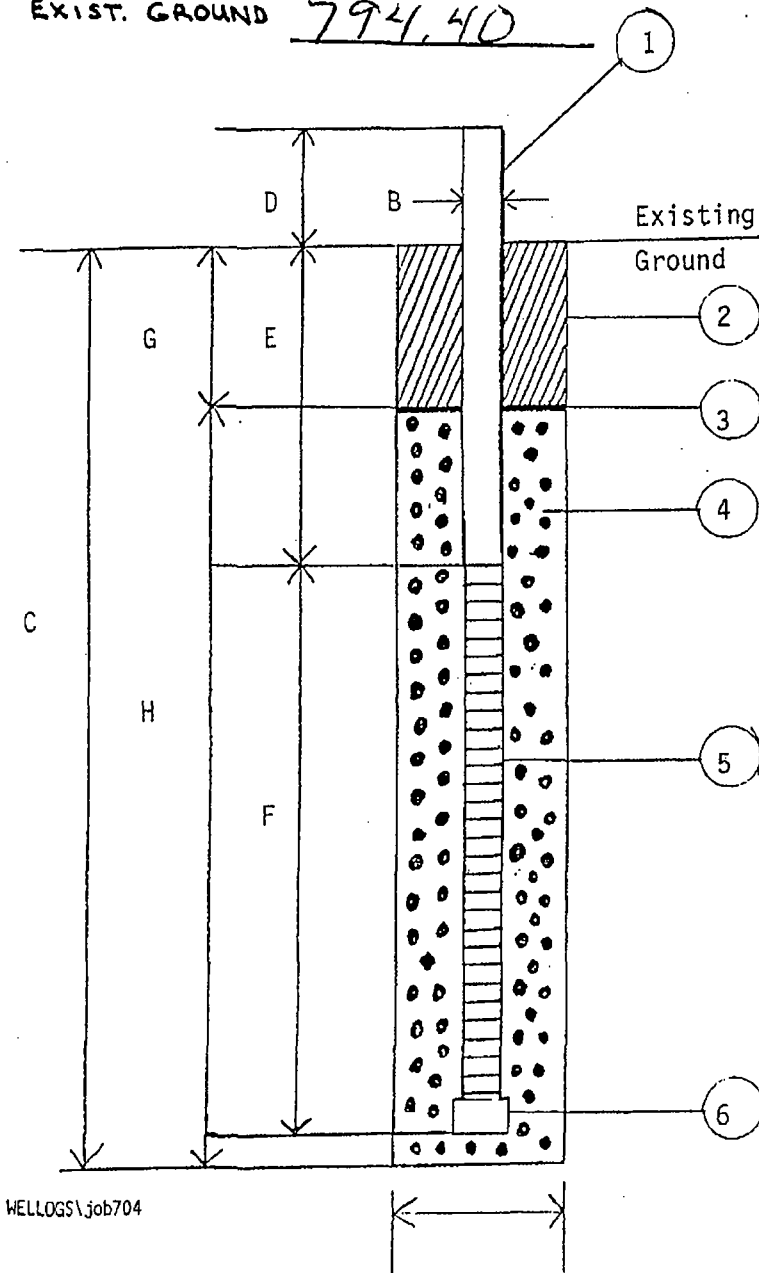
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>6</u> IN. |
| C) BORE DEPTH | <u>12</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>6.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>3</u> FT. |
| H) WASHED STONE PACK | <u>9</u> FT. |
| DEPTH TO REFUSE | <u>22 1/2</u> FT. |

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig/Dawano

GAS WELL NO.: GV-17

DATE: 11-25-08

EL. 794.40

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-23-08

WELL NO. DP-06

WELL COORDINATES _____

EXIST. GROUND 835.70

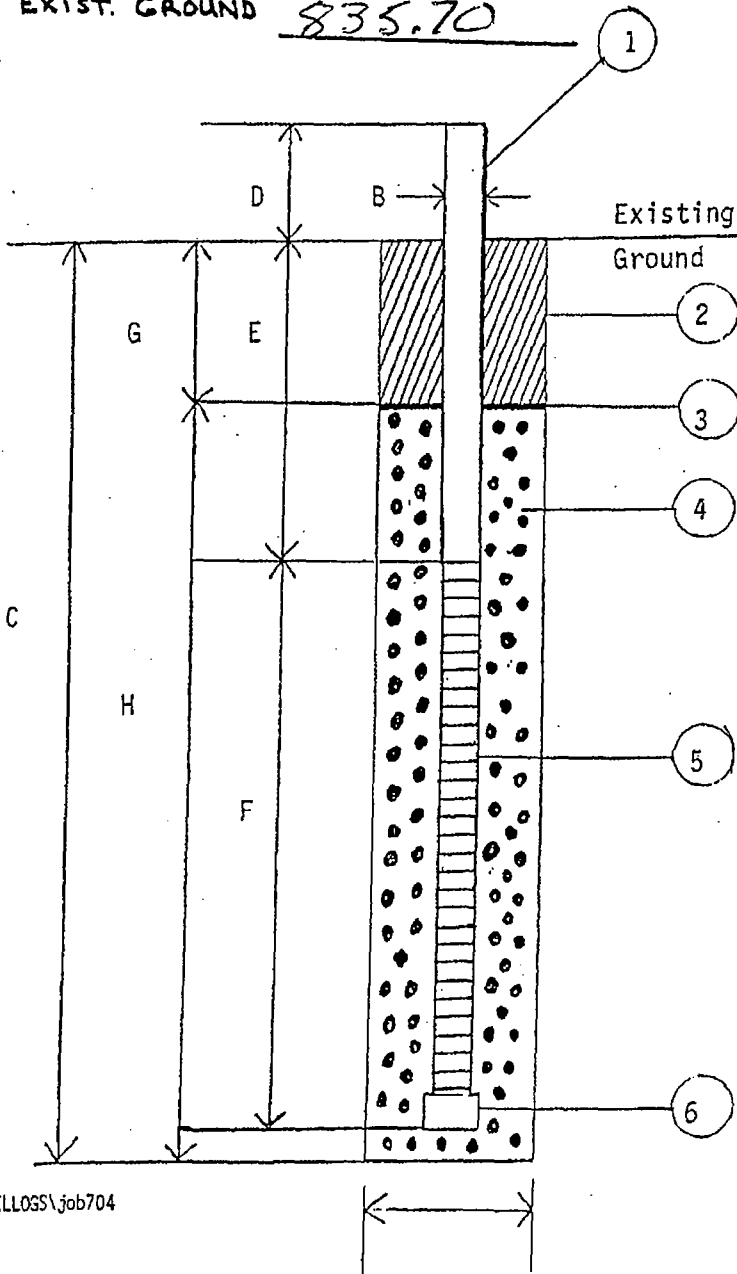
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>36.8</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>7</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>28.8</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>31.8</u> FT. |
| DEPTH TO REFUSE | <u>12</u> FT. |

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / D - w a m e

GAS WELL NO.: DP-6

DATE: 11-25-08

FL-835.70

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MTG / DEWANE

DRILLING DATE 11-25-08

WELL NO. OP-03

WELL COORDINATES _____

EXIST. GROUND 834.10

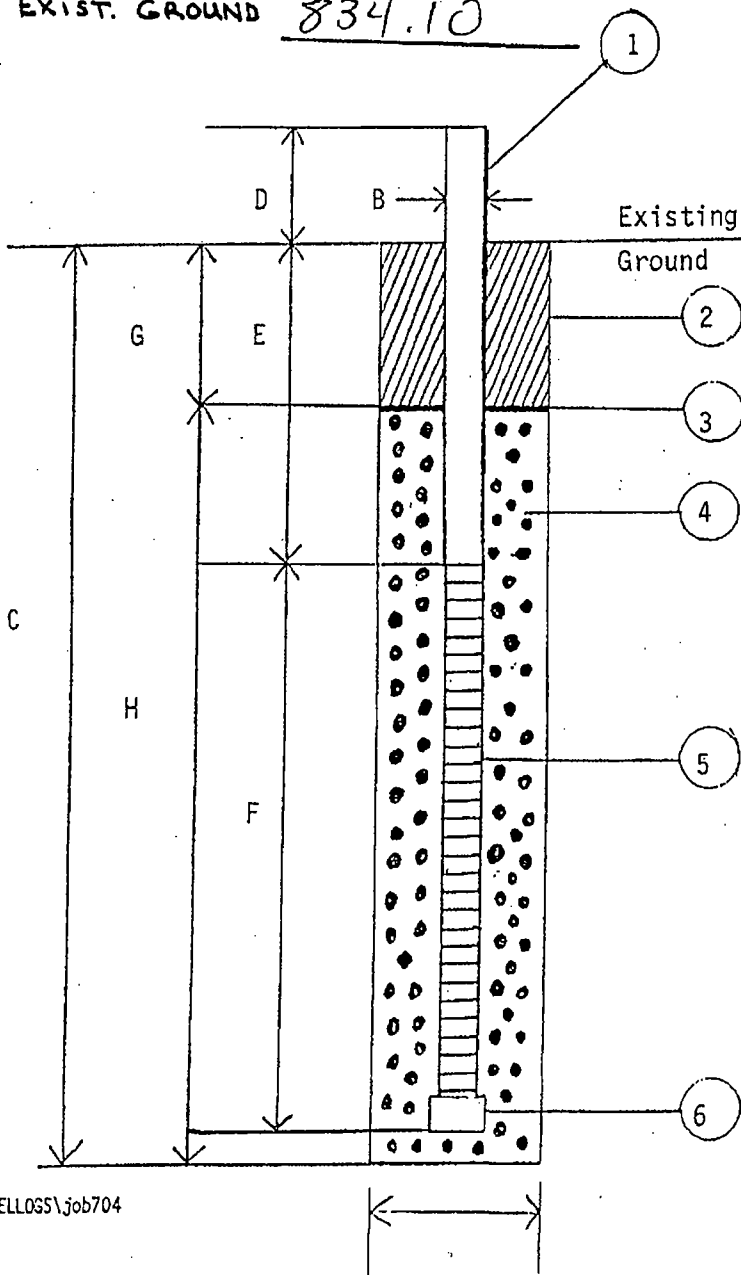
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>36.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>7.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>28.5</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>31.5</u> FT.
DEPTH TO REFUSE	<u>5</u> FT.

NOTES: _____



JOB: Mig / Deviance

GAS WELL NO.: DP-0.3

EL. 834.10

Pl. 5

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MTG / BEOWANE

DRILLING DATE 11-25-08

WELL NO. DP-17

WELL COORDINATES _____

EXIST. GROUND 827.20

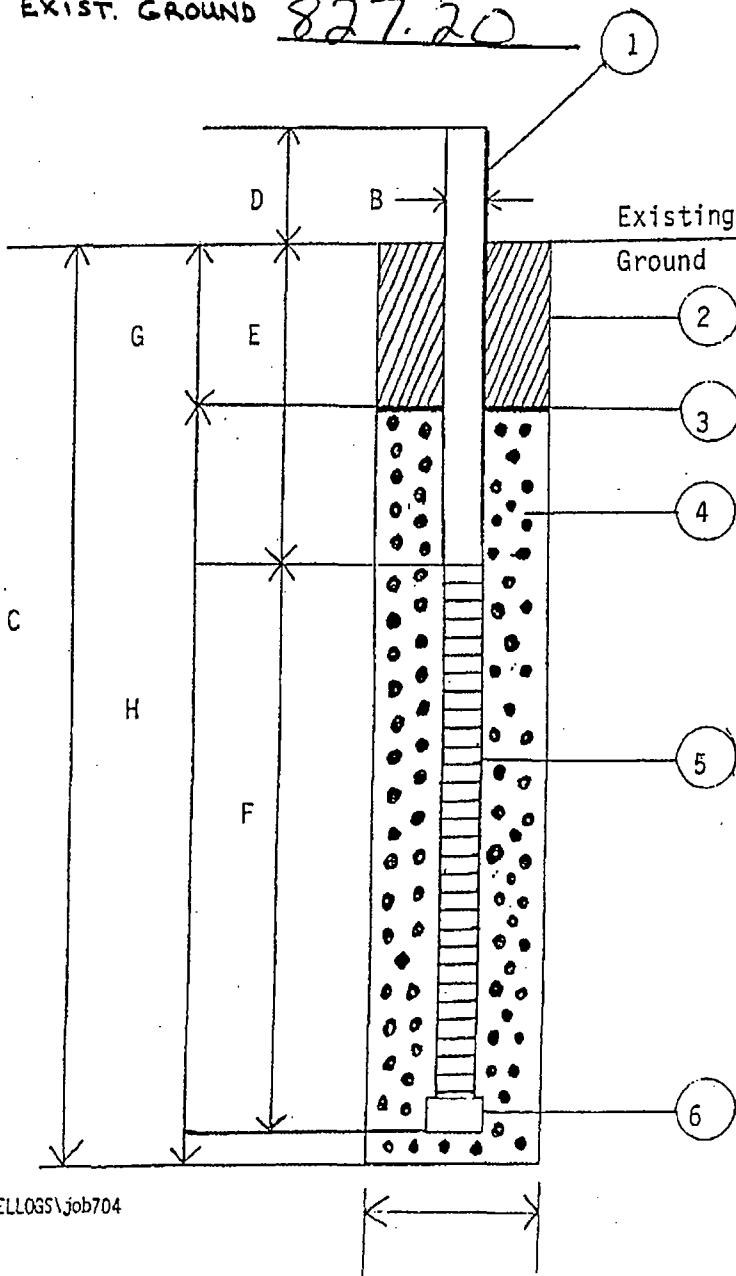
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>8</u> IN.
C) BORE DEPTH	<u>36.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>2.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>28.5</u> FT.
G) UPPER BENTONITE SEAL	<u>5</u> FT.
H) WASHED STONE PACK	<u>31.5</u> FT.
DEPTH TO REFUSE	<u>3</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / Durawave

GAS WELL NO.: OP-17

DATE: 11-25-08

EL. 827.20

[illegible]

76.5

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC DEWANE

DRILLING DATE 11-25-08

WELL NO. GV-11

WELL COORDINATES _____

EXIST. GROUND 834.50

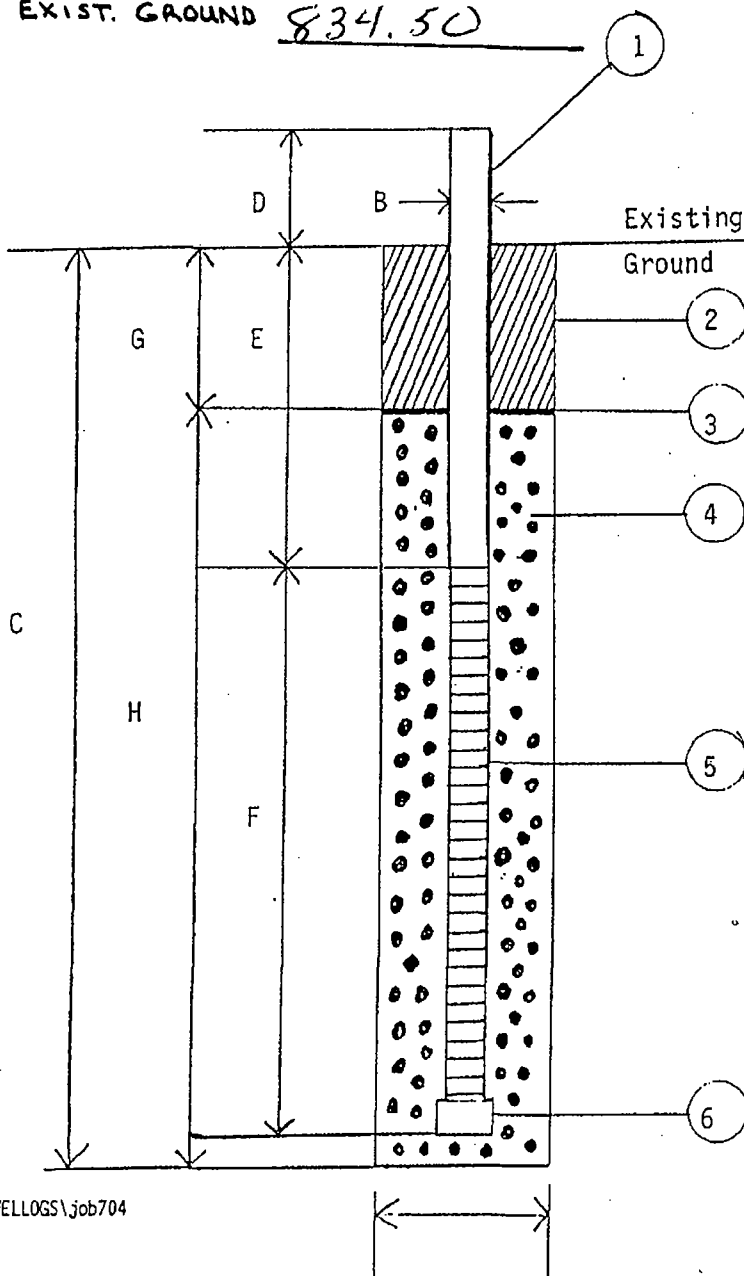
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>32</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>9.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>22</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>29</u> FT.
DEPTH TO REFUSE	<u>8</u> FT.

NOTES: 5' Extra Drilling



GAS EXTRACTION WELL LOGS

JOB: Mig / Durango

GAS WELL NO.: GV-11

DATE: 11-25-08

EL. 834.50

[illegible]
$$\begin{array}{r} 27 \\ + 5 \\ \hline 32 \end{array}$$

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-23-08

WELL NO. GV-18

WELL COORDINATES _____

EXIST. GROUND _____

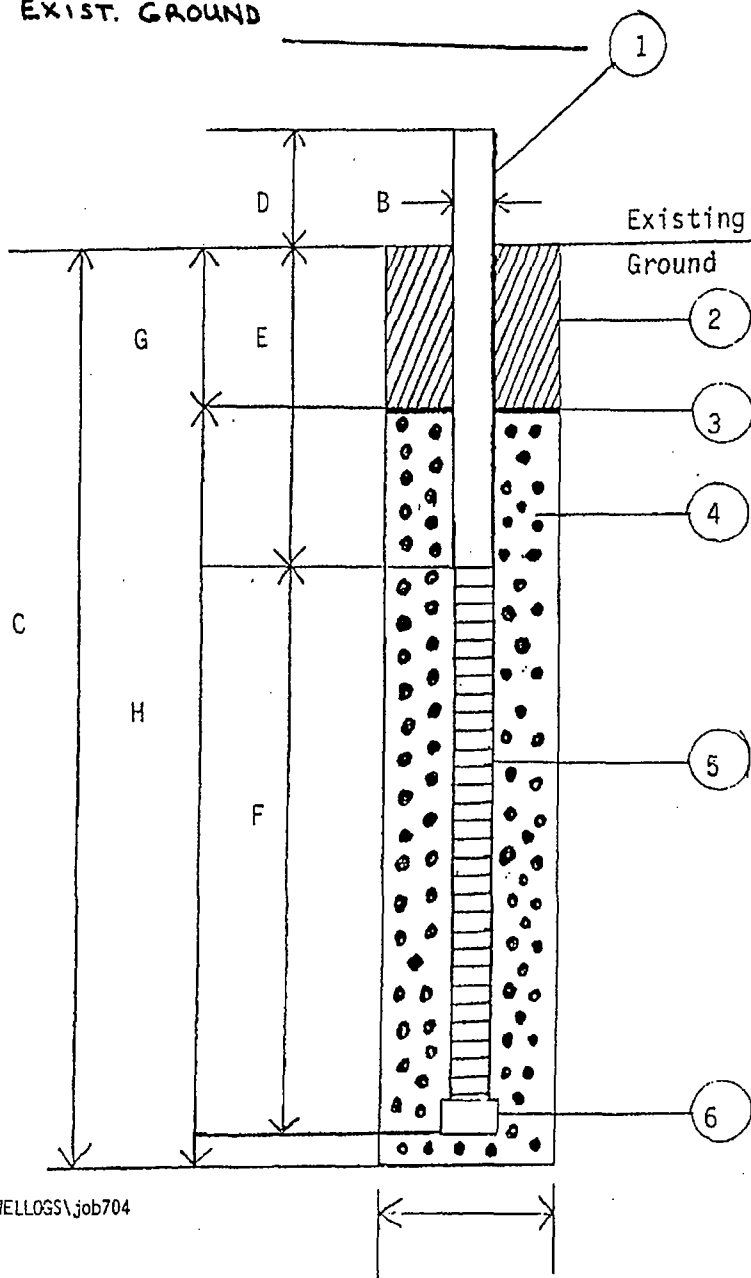
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>10.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12.5</u> FT.
DEPTH TO REFUSE	<u>3</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / Demare

GAS WELL NO.: GV-18

DATE: 11-25-08

EL-811.50

[illegible]

01/94

DAY: Wed DATE: 11-26-08 WEATHER: Clear TEMPERATURE: 30°s

		DAILY TOTALS			
		EMPH	NAME	MACHINE #	HRS
<u>JOB CONDITIONS</u>					
CUT/SOIL		629	K. Kilovan	6059	4.5
		629	K. Kilovan	4130	4.0
SOIL MOISTURE: DRY MOIST WET SATURATED		102	D. King	4019	8.0
SOIL TYPE: A B C OTHER:		102	D. King	5043	1.0
TRENCH WIDTH @ TOP	DEPTH OF TRENCH	195	S. Smith	3715	8.0
		195	S. Smith	3003	1.0
COMPACTION TEST					
<u>DELAYS, SHORTAGES, PROBLEMS</u>					
MATERIAL					
EQUIPMENT					
LABOR					
<u>VERBAL INSTRUCTIONS</u>					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-26-08

WELL NO. GK-40

WELL COORDINATES _____

EXIST. GROUND 803.05

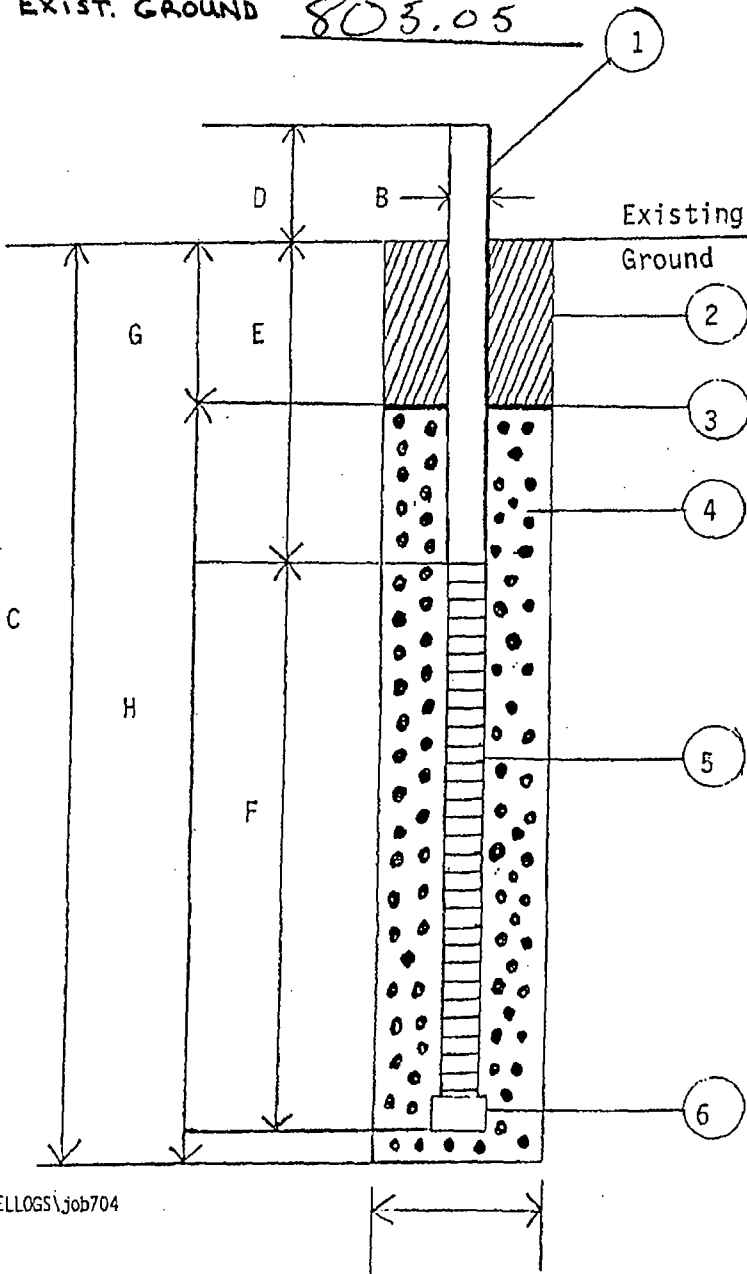
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>6</u> IN. |
| C) BORE DEPTH | <u>13.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>8.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5.0</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>8.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>3</u> FT. |
| H) WASHED STONE PACK | <u>10.5</u> FT. |
| DEPTH TO REFUSE | <u>3.5</u> FT. |

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / Downcase

GAS WELL NO.: GV-40

DATE: 11-26-08 EL. 803.05

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 11-26-08

WELL NO. GV-15

WELL COORDINATES _____

EXIST. GROUND 793.90

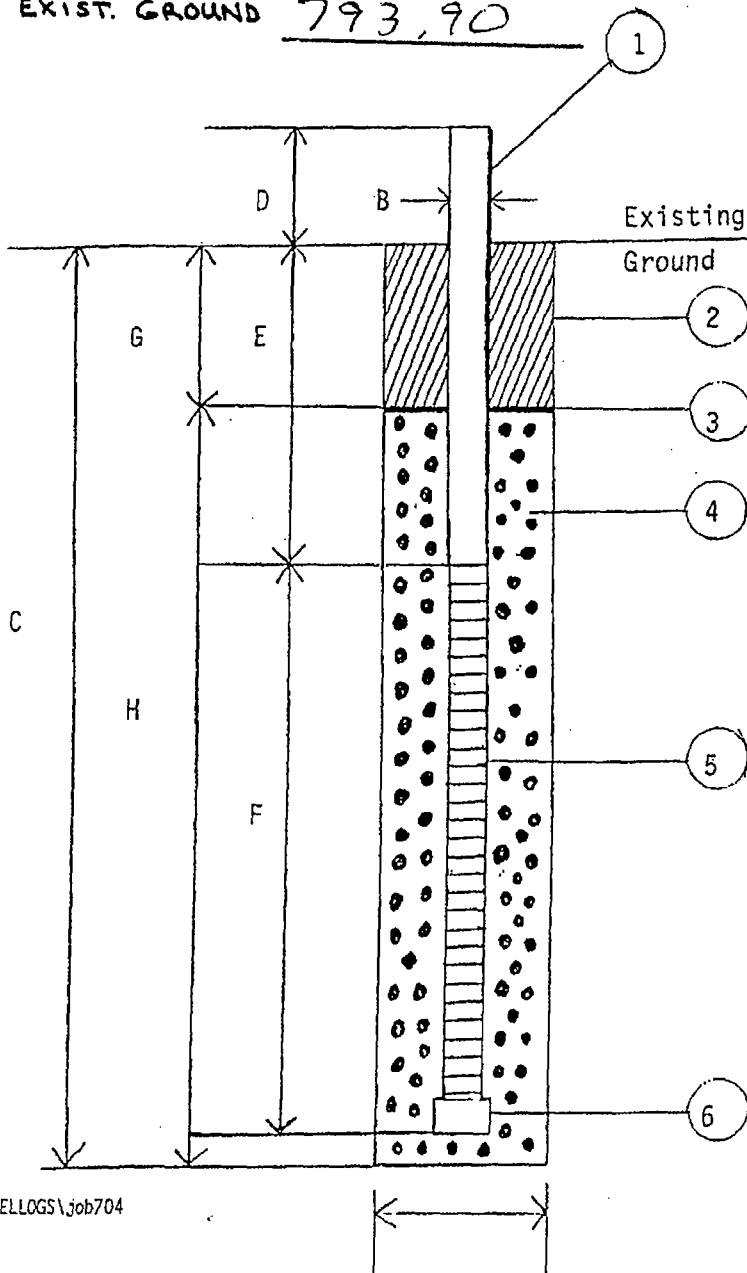
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFAI 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>10</u> FT.
DEPTH TO REFUSE	<u>2.5</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / Newcomer

GAS WELL NO.: CV-15

DATE: 11-26-08

EL - 793,90

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC / DEWANE

DRILLING DATE 11-26-08

WELL NO. GV-27

WELL COORDINATES _____

EXIST. GROUND 804.76

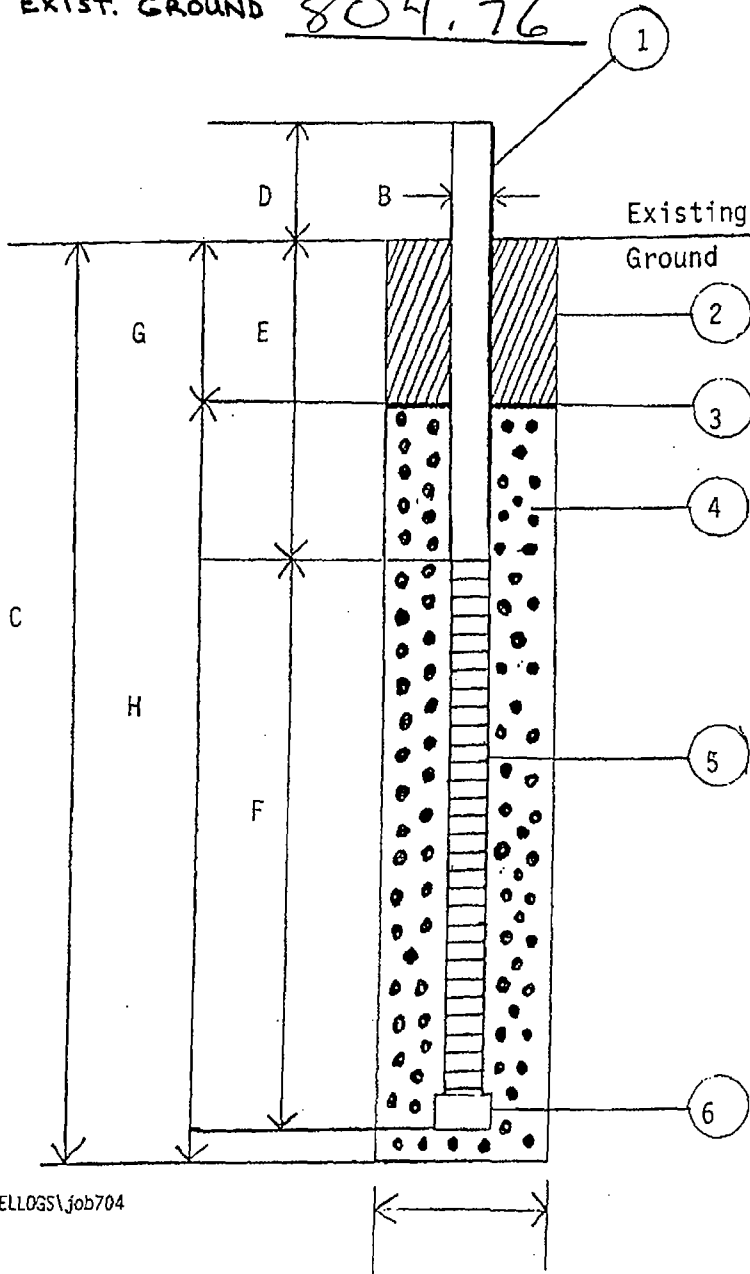
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>10</u> FT.
DEPTH TO REFUSE	<u>3.5</u> FT.

NOTES: Well went 41'
Short



GAS EXTRACTION WELL LOGS

JOB: mg / D-wave

GAS WELL NO.: GV-27

DATE: 11-26-08

EL. 804.76

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC DEWANE

DRILLING DATE 11-26-08

WELL NO. SV-41

WELL COORDINATES _____

EXIST. GROUND 800.33.

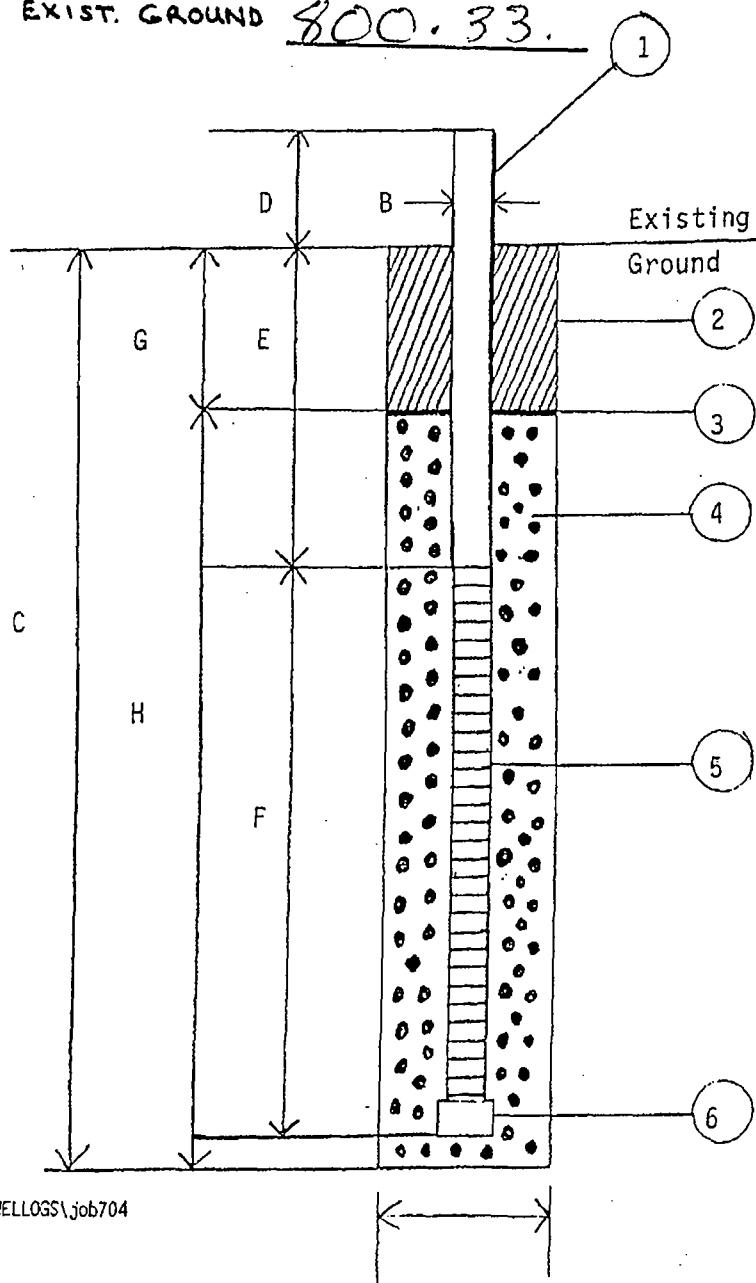
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>8</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>10.5</u> FT.
DEPTH TO REFUSE	<u>4.</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig / Dewane

GAS WELL NO.: GV-41

DATE: 11-26-08 EL = 800.33

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE MIC DEWANE

DRILLING DATE 11-26-08

WELL NO. GV-08

WELL COORDINATES _____

EXIST. GROUND 805.14

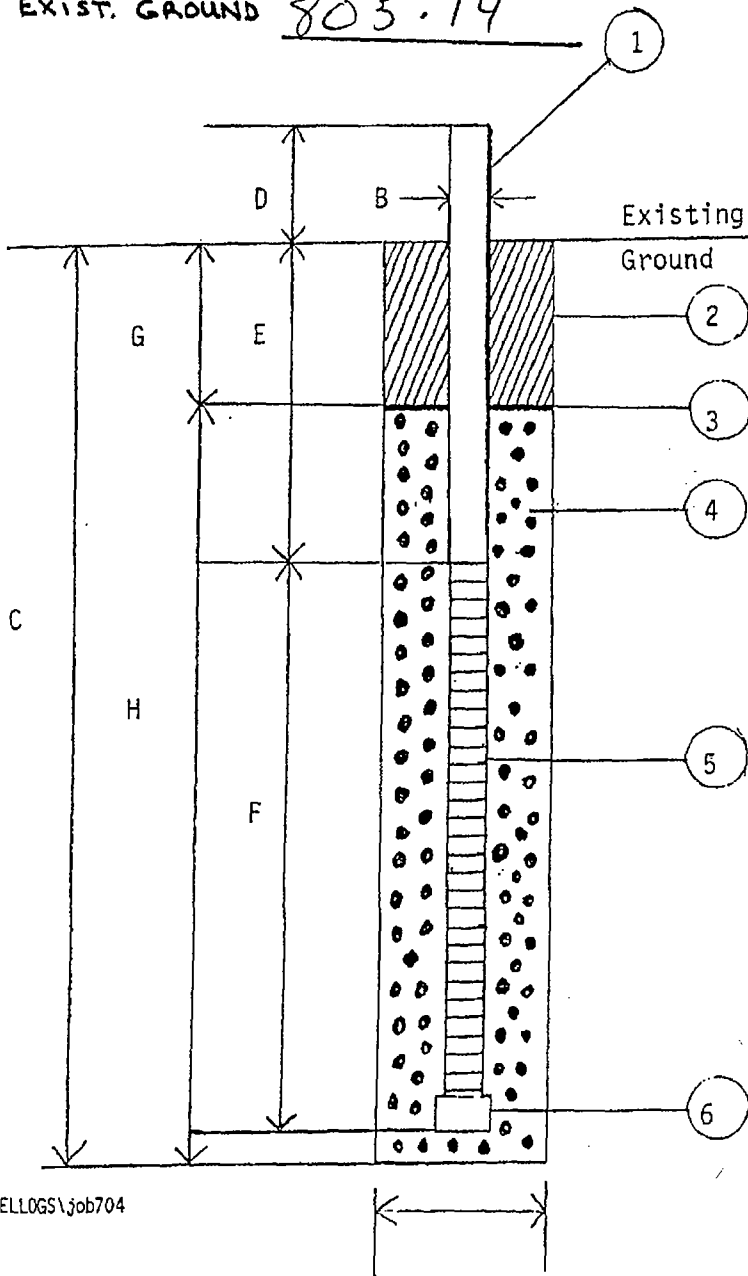
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

A) BORE SIZE	<u>36</u> IN.
B) PIPE SIZE	<u>6</u> IN.
C) BORE DEPTH	<u>13.5</u> FT.
D) SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E) SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F) SLOTTED PIPE LENGTH	<u>10.5</u> FT.
G) UPPER BENTONITE SEAL	<u>3</u> FT.
H) WASHED STONE PACK	<u>12.5</u> FT.
DEPTH TO REFUSE	<u>3.2</u> FT.

NOTES: _____



GAS EXTRACTION WELL LOGS

JOB: Mig/Dewane

GAS WELL NO.: 50-8

DATE: 11-26-68

$$EL = 805.14$$
[illegible]



TERRA®

▲ ENGINEERING & CONSTRUCTION CORPORATION ▲

LETTER OF TRANSMITTAL

DATE: December 17, 2008 **Job:** #880

ATTN: Burak Tanyu, PHD

RE: Foreman Reports 12/1/08 & 12/8/08
MIG/Dewane L.F.

TO: Geosyntec Consultants
134 N. Lasalle St., Suite 300
Chicago, IL 60602

WE ARE SENDING THE FOLLOWING:

1 – Copy of Foreman Reports weeks of 12/1/08 & 12/8/08

REMARKS:

For your records

Copy to: File

Signed:


John R. Karsten, P.E.
President

If enclosures are not as noted, kindly notify us at once.

2201 VONDRON ROAD • MADISON, WI 53718-6795

PHONE: 608/221-3501 • FAX: 608/221-4075 • E-MAIL: terra@terraconst.com

VISIT OUR WEBSITE: www.terraconst.com

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TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880

JOB NAME: Mig /

JOB SUPERVISOR: S. Smith

DAY: Mon

DATE: 12-01-08

WEATHER: Snow

TEMPERATURE: 20.5

JOB CONDITIONS		DAILY TOTALS			
		EMPH	NAME	MACHINE #	HRS
CUT/SOIL		345	G. W. Hington	6059	10.5
		629	K. K. L. L. L.	4150	10.5
SOIL MOISTURE: DRY MOIST WET SATURATED		102	D. King	5013	3.0
SOIL TYPE: A B C OTHER:		102	D. King	4019	2.5
TRENCH WIDTH @ TOP		195	S. Smith	3715	11.0
DEPTH OF TRENCH					
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Drilled & Installed 10 GU

The water box didn't show

Tried to call

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION M: 7 / Avenue

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GV-39

GROUND ELEVATION 811.30

MATERIAL LIST

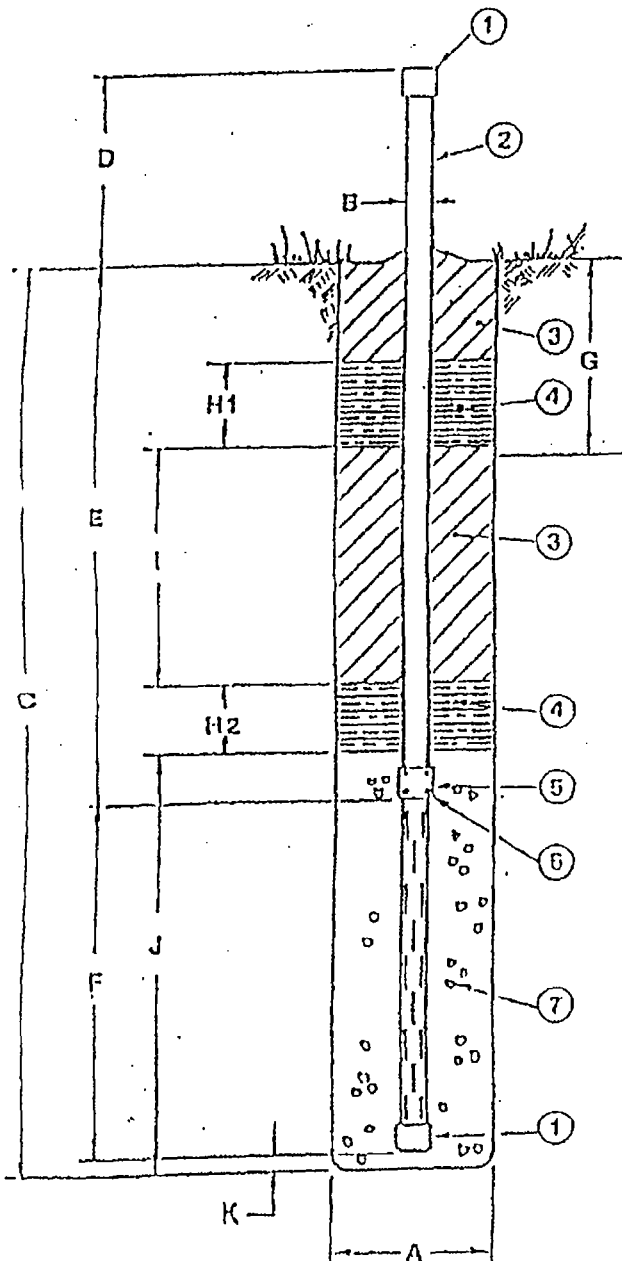
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>13.5</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>9.0</u> FT.
F SLOTTED PIPE LENGTH	<u>8.5</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>10.5</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>2.5</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: Mig / Duran

GAS WELL NO.: GW-39

EL. 811.30

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig/Dewane
WELL LOCATION _____
GROUND ELEVATION 818.40

DRILLING DATE 12-01-08
WELL NO. GV-28

MATERIAL LIST

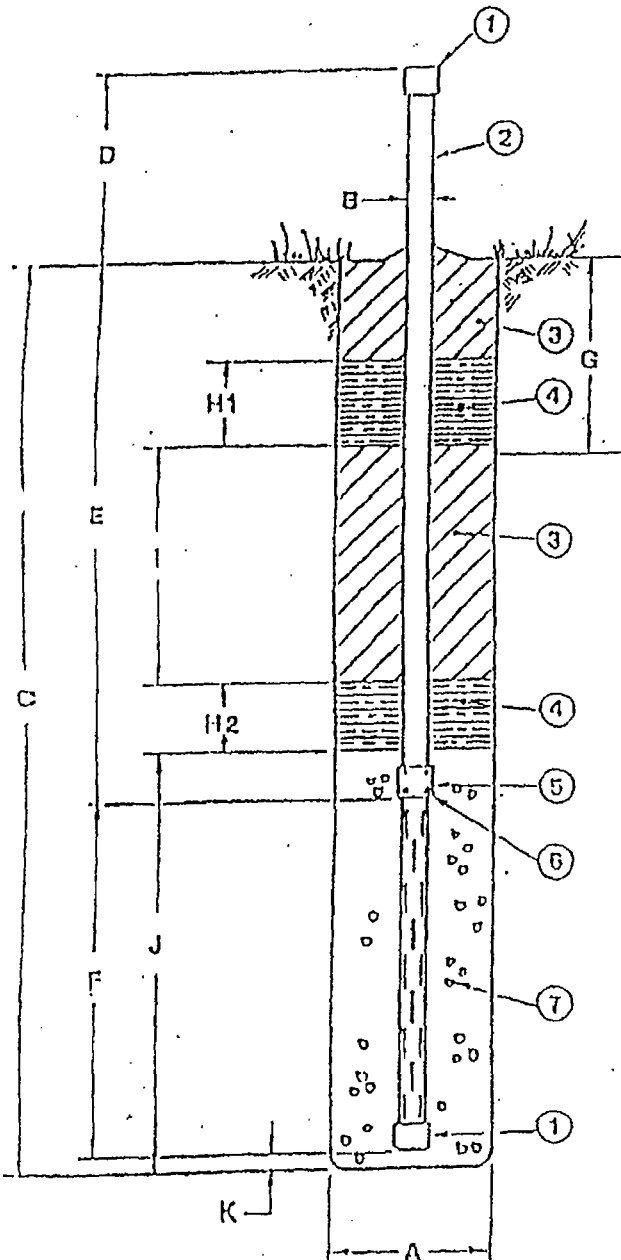
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>9</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>4.0</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>6</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mid Power

GAS WELL NO.: GK-25

DATE: 12-01-08

EL-818,40

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig / Down

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GU-05

GROUND ELEVATION _____

MATERIAL LIST

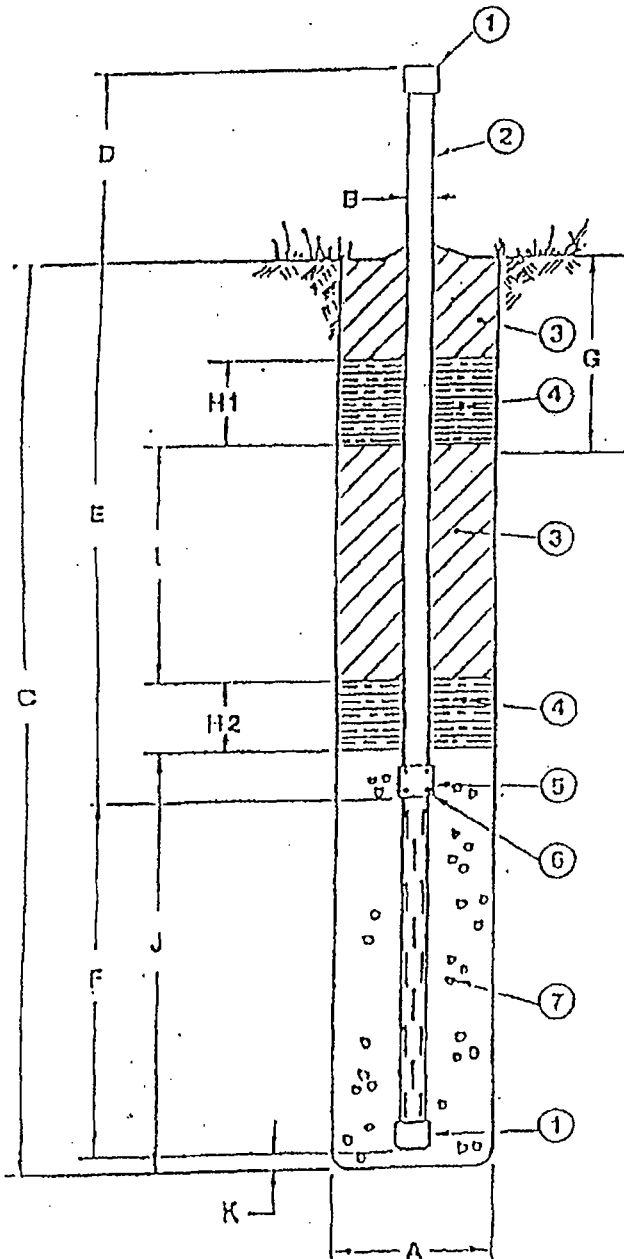
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>12</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>2.0</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>8</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: Mig/Deane

GAS WELL NO.: GV-05

DATE: 12-01-08 EL-821.50

12

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION M: 8 / D-1000

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GU-04

GROUND ELEVATION _____

MATERIAL LIST

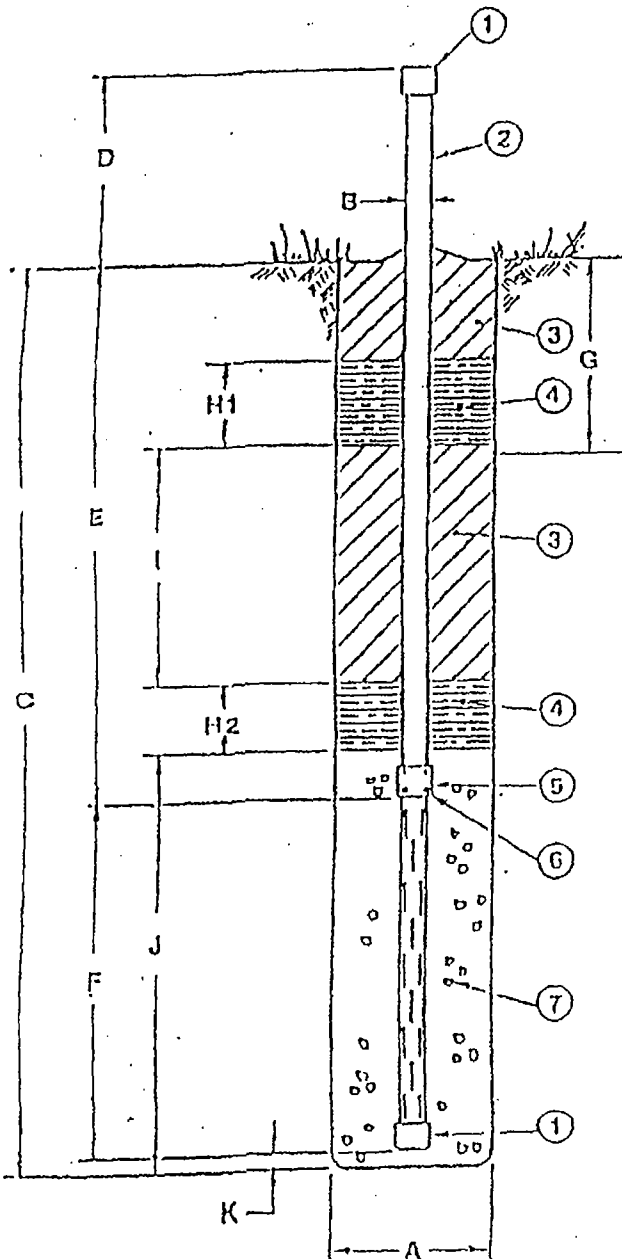
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>13</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>10</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>2</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Advance

GAS WELL NO.: GV-04

DATE: 12-01-08 EL-871.40

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig Down

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GV-03

GROUND ELEVATION 816.45

MATERIAL LIST

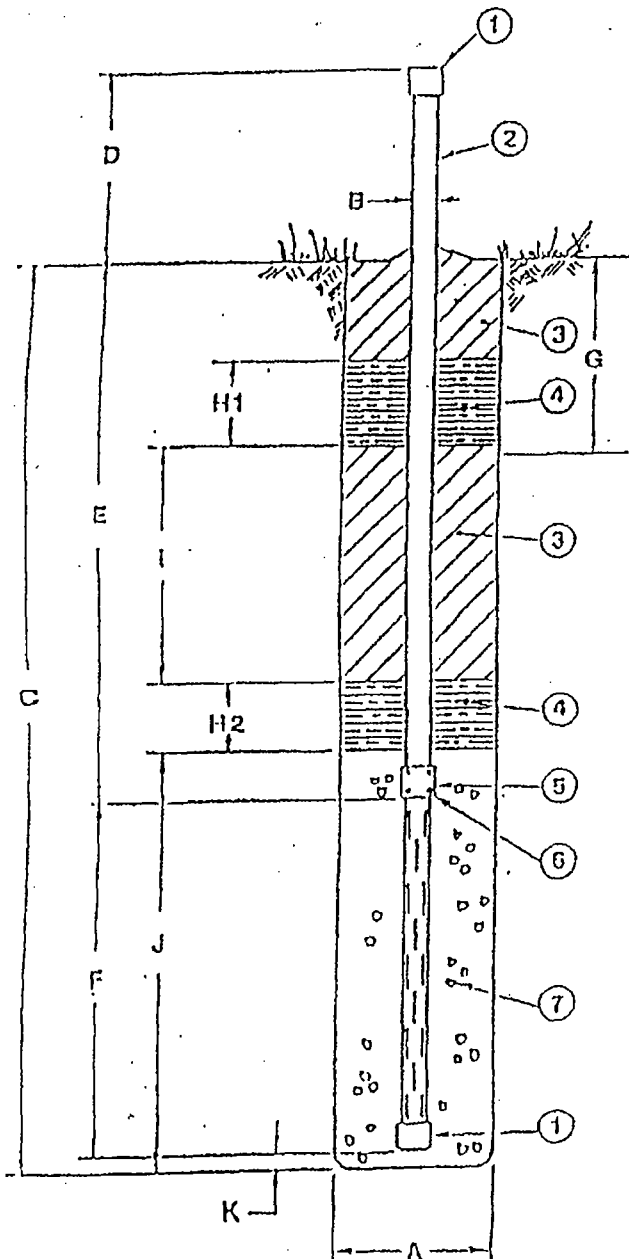
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>13</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>10</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES _____

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: mg/Denare

GAS WELL NO.: GV-03

DATE: 12-01-08 EL-816.45

14' Total Boar Depth

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig / New am
WELL LOCATION _____
GROUND ELEVATION 818.70

DRILLING DATE 12-01-08
WELL NO. GV-2

MATERIAL LIST

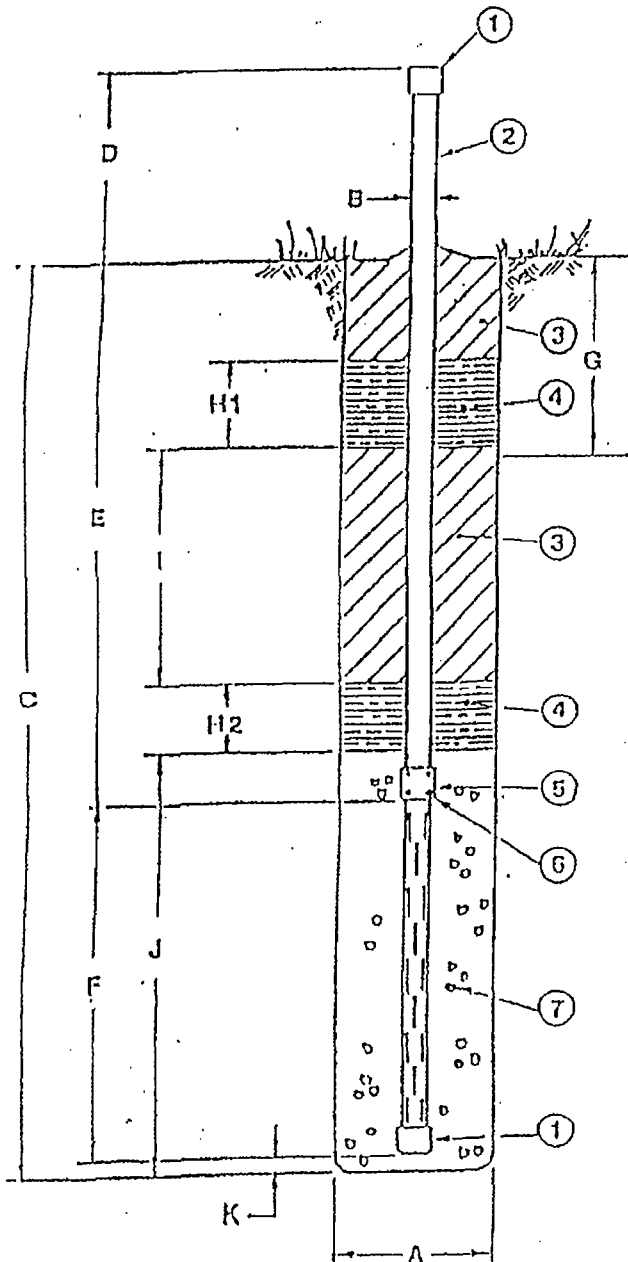
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>13</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>8.0</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/>
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>10</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig. Acuarre

GAS WELL NO.: GW-2

DATE: 12-01-08

EL-818,70

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION M: 8 / D: 1000
 WELL LOCATION _____
 GROUND ELEVATION 824.60

DRILLING DATE 12-01-08
 WELL NO. GV-09

MATERIAL LIST

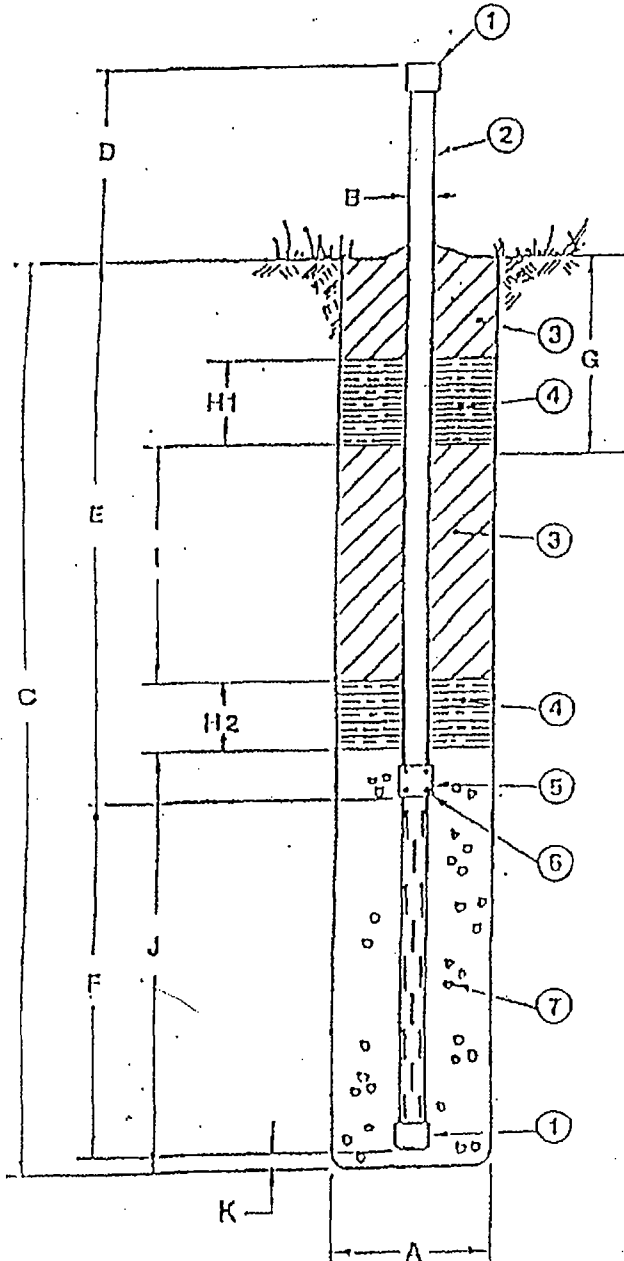
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>3.6</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>20.5</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>24.0</u> FT.
F SLOTTED PIPE LENGTH	<u>16.5</u> FT.
G COVER DEPTH	<u>—</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>—</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>—</u> FT.
J GRAVEL PACK	<u>17.5</u> FT.
K GRAVEL BASE	<u>—</u> FT.
REFUSE DEPTH	<u>5</u> FT.
REFUSE TEMP. RANGE	<u>—</u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u>—</u> FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Downhole
GAS WELL NO.: GV-09

GAS WELL NO.: GV-09

DATE: 12-01-08

EL-824.60

[illegible]

20.5

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig / Dewano

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GV-01

GROUND ELEVATION 812.60

MATERIAL LIST

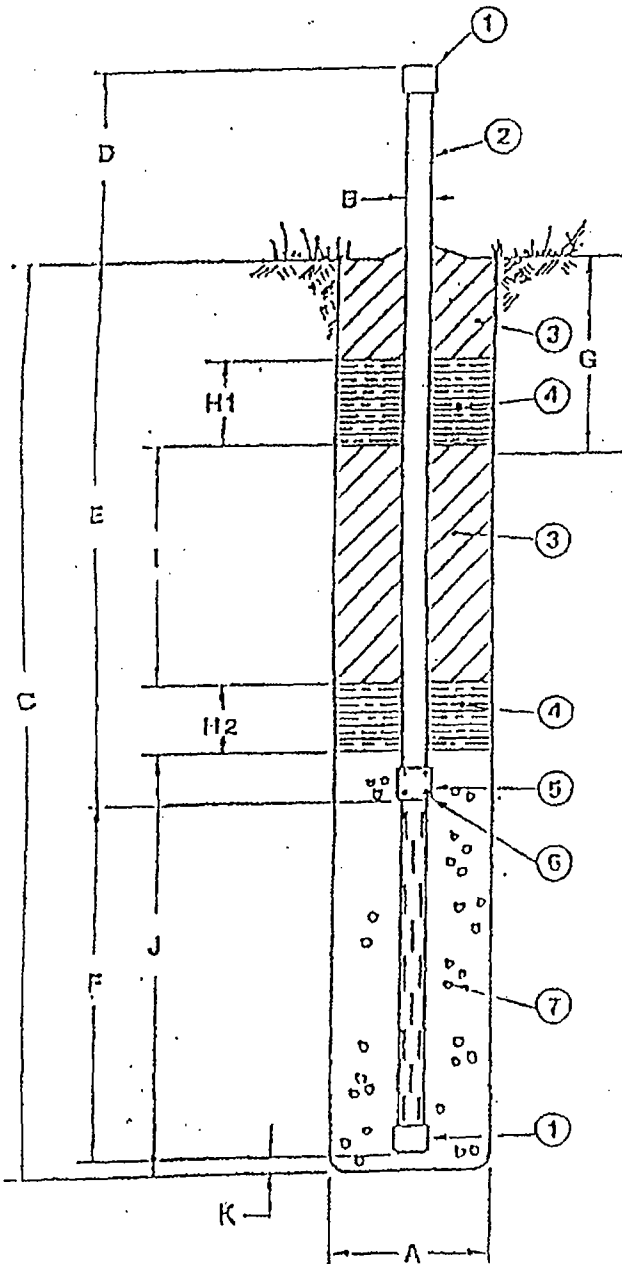
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>14</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>9</u> FT.
G COVER DEPTH	<u> </u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u> </u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u> </u> FT.
J GRAVEL PACK	<u>11</u> FT.
K GRAVEL BASE	<u> </u> FT.
REFUSE DEPTH	<u>2.5</u> FT.
REFUSE TEMP. RANGE	<u> </u> °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	<u> </u> FT.

NOTES _____

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Dewar

GAS WELL NO.: G4-01

DATE: 12-01-08

EL-812.60

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig/Dewan

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GU-07

GROUND ELEVATION 812.15

MATERIAL LIST

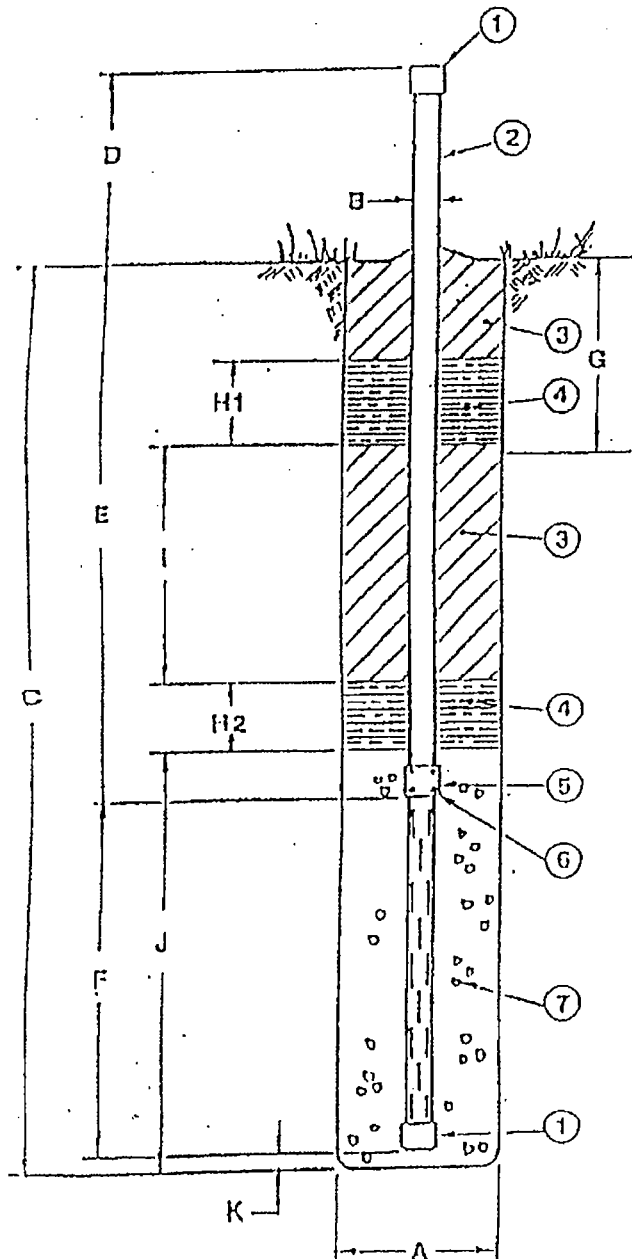
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>16</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>11.0</u> FT.
G COVER DEPTH	<u>10</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>NO</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>NO</u> FT.
J GRAVEL PACK	<u>13</u> FT.
K GRAVEL BASE	<u>1</u> FT.
REFUSE DEPTH	<u>2.5</u> FT.
REFUSE TEMP. RANGE	____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: Mig / Newham
GAS WELL NO.: EU-07

GAS WELL NO.: GU-07

EL. 812.15

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION m:q/D-wam o

DRILLING DATE 12-01-08

WELL LOCATION _____

WELL NO. GV-06

GROUND ELEVATION 818.40

MATERIAL LIST

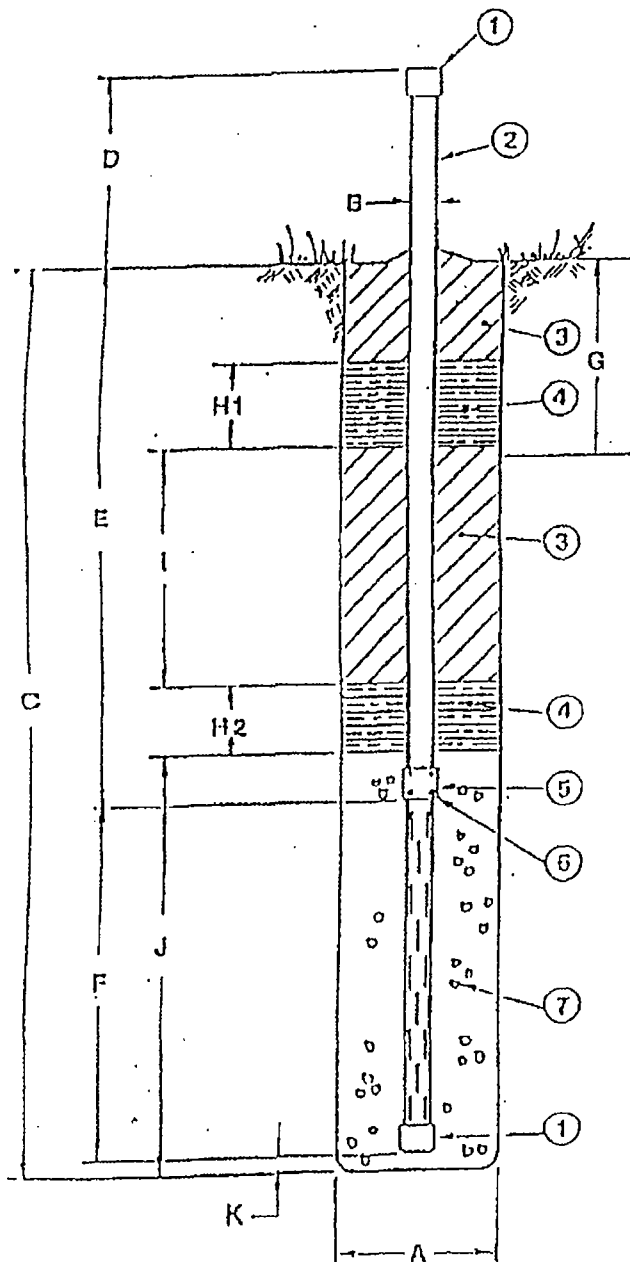
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>15.5</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>11.5</u> FT.
G COVER DEPTH	<u>14.0</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>14.0</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>14.0</u> FT.
J GRAVEL PACK	<u>12.5</u> FT.
K GRAVEL BASE	<u>2.5</u> FT.
REFUSE DEPTH	<u>2.5</u> FT.
REFUSE TEMP. RANGE	____ ° F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: Mig / Power case

GAS WELL NO.: GV-06

[illegible]

15.5

01/94

JOB NO. 880

JOB NAME: mig / Dorian

JOB SUPERVISOR: S. Smith

DAY: Tue

DATE: 12-02-08 WEATHER:

TEMPERATURE:

SAFETY ITEMS VARIFIED

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Finished GV-Sals from Moore
Drilled & Installed 2 GV- &
2 DP walls

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT:

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 12-02-08

WELL NO. DP-14

WELL COORDINATES _____

EXIST. GROUND 830.50

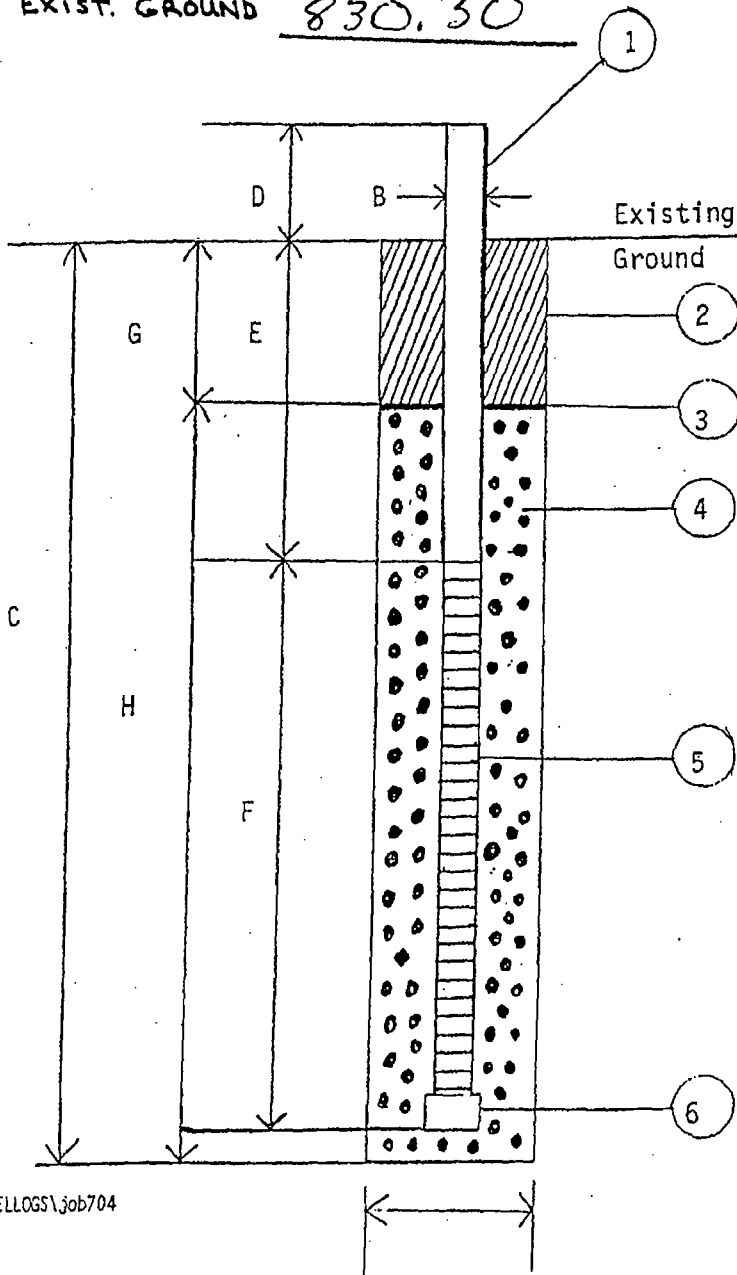
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>362.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>36.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>36.5</u> FT. |
| DEPTH TO REFUSE | <u>9</u> FT. |

NOTES: _____



GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG/DEWANE

DRILLING DATE 12-02-08

WELL NO. DP-14

WELL COORDINATES _____

EXIST. GROUND 830.50

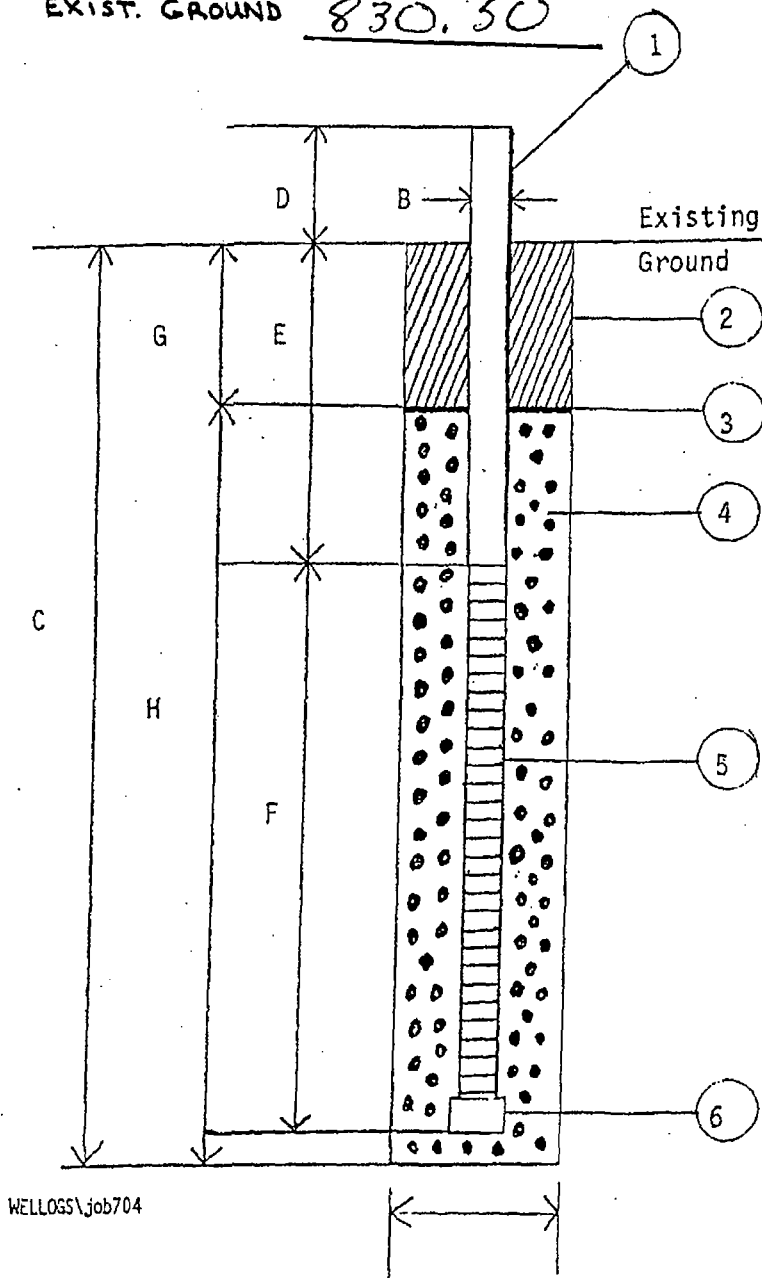
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-----------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>42.5</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>36.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5</u> FT. |
| H) WASHED STONE PACK | <u>36.5</u> FT. |
| DEPTH TO REFUSE | <u>9</u> FT. |

NOTES: _____



JOB: Mig/Dwara

GAS WELL NO.: DP-14-S

DATE: 12-02-08 EL-830.50

[illegible]

JOB: Mig/Dwara

GAS WELL NO.: DP-14-8

DATE: 12-02-08 EL-830.50

[illegible]

GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 12-02-08

WELL NO. DP-04

WELL COORDINATES _____

EXIST. GROUND 828.30

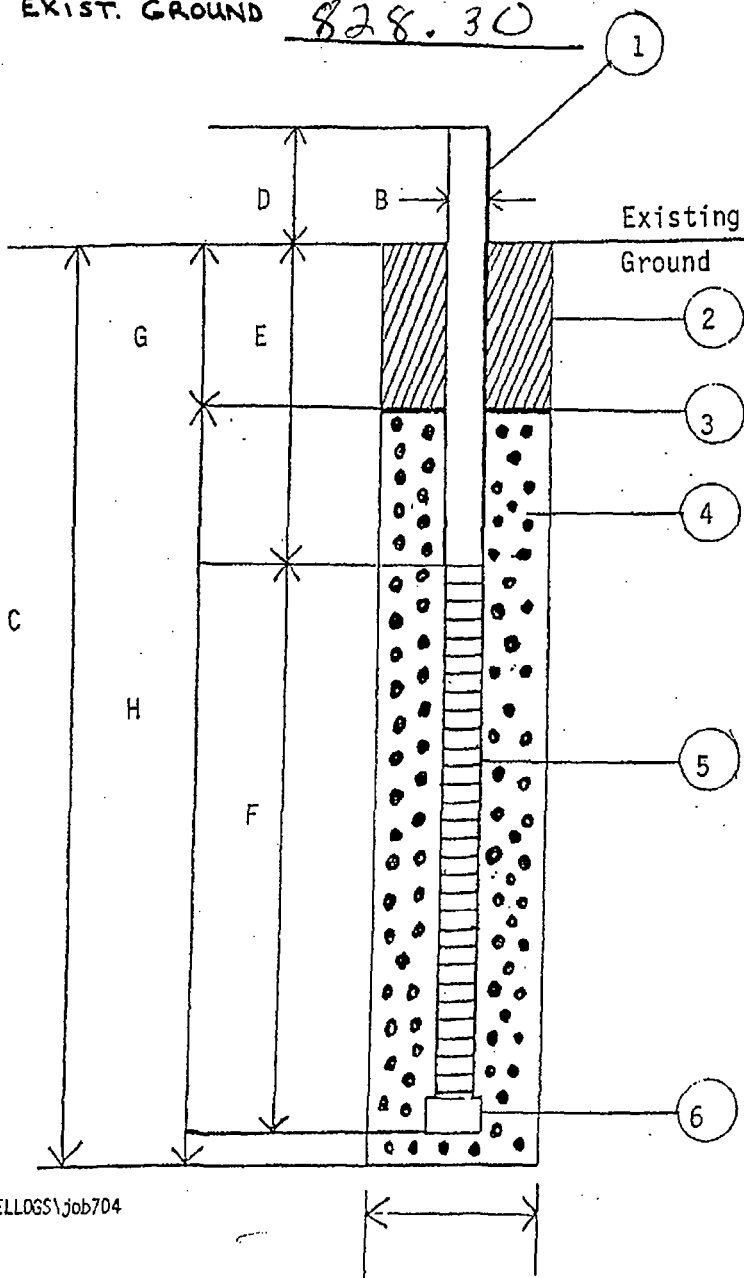
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>31 1/2</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>25.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5'</u> FT. |
| H) WASHED STONE PACK | <u>26 1/2</u> FT. |
| DEPTH TO REFUSE | <u>3 1/2</u> FT. |

NOTES: _____



GAS EXTRACTION WELL DUAL PHASE DESIGN/AS-BUILT

SITE MIG / DEWANE

DRILLING DATE 12-02-08

WELL NO. DP-04

WELL COORDINATES _____

EXIST. GROUND 828.30

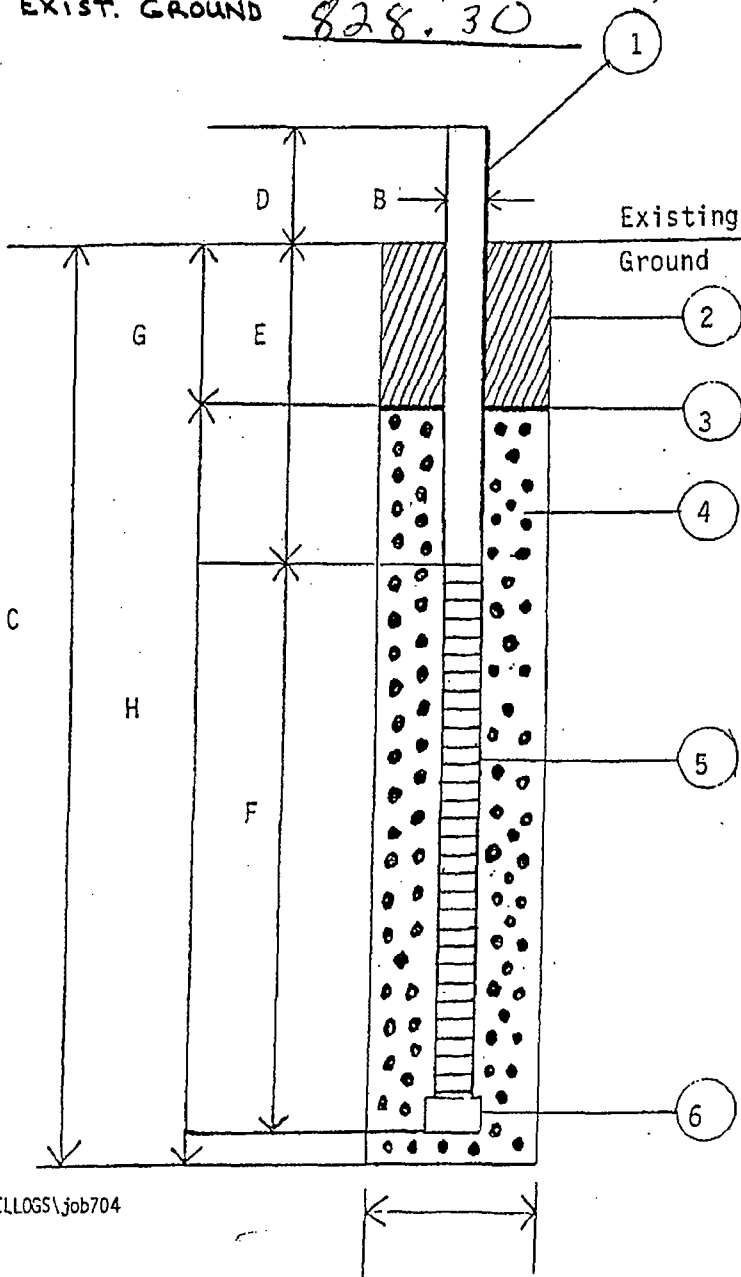
MATERIAL LIST

- 1) SCH 80 PVC PIPE
- 2) GRANULAR BENTONITE
- 3) MIRAFL 600X GEOTEXTILE
- 4) 1-2" WASHED STONE
- 5) SCH 80 PVC FACTORY SLOTTED .040" PIPE
- 6) PVC SCH 80 CAP

SPECIFICATIONS

- | | |
|----------------------------|-------------------|
| A) BORE SIZE | <u>36</u> IN. |
| B) PIPE SIZE | <u>8</u> IN. |
| C) BORE DEPTH | <u>31 1/2</u> FT. |
| D) SOLID PIPE ABOVE GROUND | <u>7.5</u> FT. |
| E) SOLID PIPE BELOW GROUND | <u>5</u> FT. |
| F) SLOTTED PIPE LENGTH | <u>25.5</u> FT. |
| G) UPPER BENTONITE SEAL | <u>5'</u> FT. |
| H) WASHED STONE PACK | <u>26 1/2</u> FT. |
| DEPTH TO REFUSE | <u>3 1/2</u> FT. |

NOTES: _____



JOB: Mig / De la Cueva

GAS WELL NO.: DP-04

[illegible]

GAS EXTRACTION WELL LOGS

JOB: Mgr / Development

GAS WELL NO.: DP-04

DATE: 12-02-08 EL- 828,30

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig. New and

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GV-10

GROUND ELEVATION 823.50

MATERIAL LIST

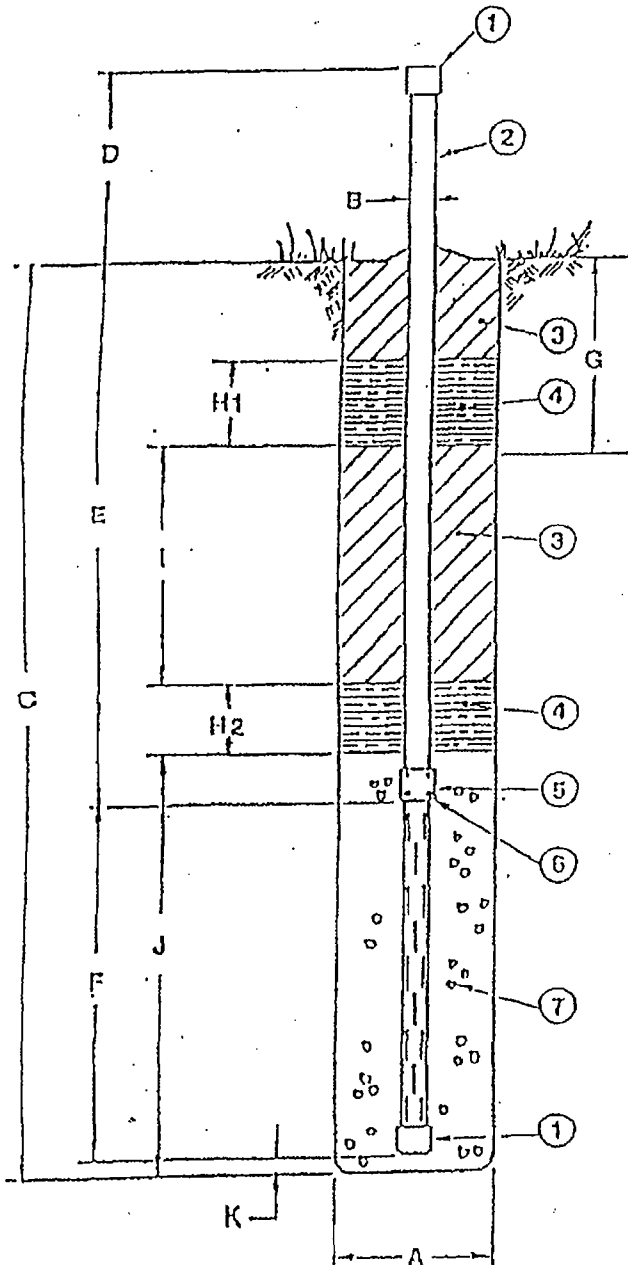
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>20.5</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>21.0</u> FT.
F SLOTTED PIPE LENGTH	<u>15.5</u> FT.
G COVER DEPTH	<u>11</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>16.0</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>NO</u> FT.
J GRAVEL PACK	<u>16.5</u> FT.
K GRAVEL BASE	<u>1</u> 16.5 FT.
REFUSE DEPTH	<u>11</u> FT.
REFUSE TEMP. RANGE	____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES _____

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig. Newane

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GV-10

GROUND ELEVATION 825.50

MATERIAL LIST

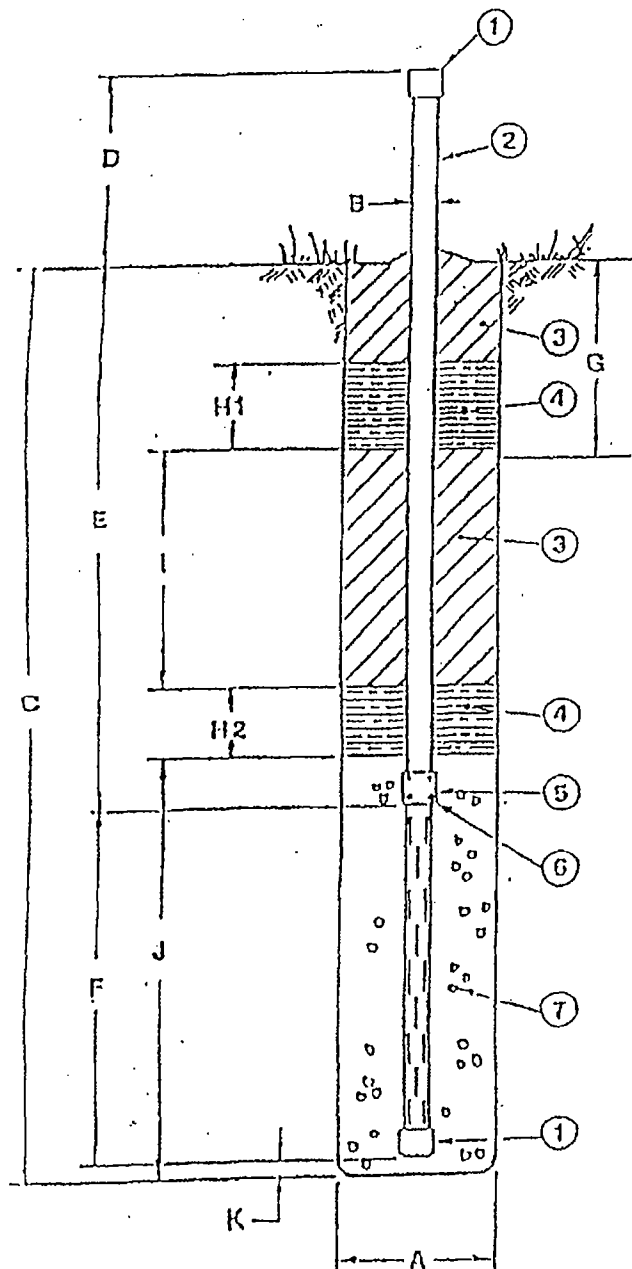
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>20.5</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>21.0</u> FT.
F SLOTTED PIPE LENGTH	<u>15.5</u> FT.
G COVER DEPTH	<u>11</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>16.0</u> FT.
H3 3" PEA GRAVEL	YES - <u>NO</u>
I SOIL BACKFILL	<u>NO</u> FT.
J GRAVEL PACK	<u>16.5</u> FT.
K GRAVEL BASE	<u>1</u> 16.5 FT.
REFUSE DEPTH	<u>11</u> FT.
REFUSE TEMP. RANGE	____ ° F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Dancer

GAS WELL NO.: EV-10

DATE: 12-02-05

EL. 825.50

[illegible]

JOB: Mig / Descender

GAS WELL NO.: EV-10

DATE: 12-02-08

EL. 825.50

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig. Durango

DRILLING DATE 12--02-08

WELL LOCATION _____

WELL NO. GU-37

GROUND ELEVATION 825.60

MATERIAL LIST

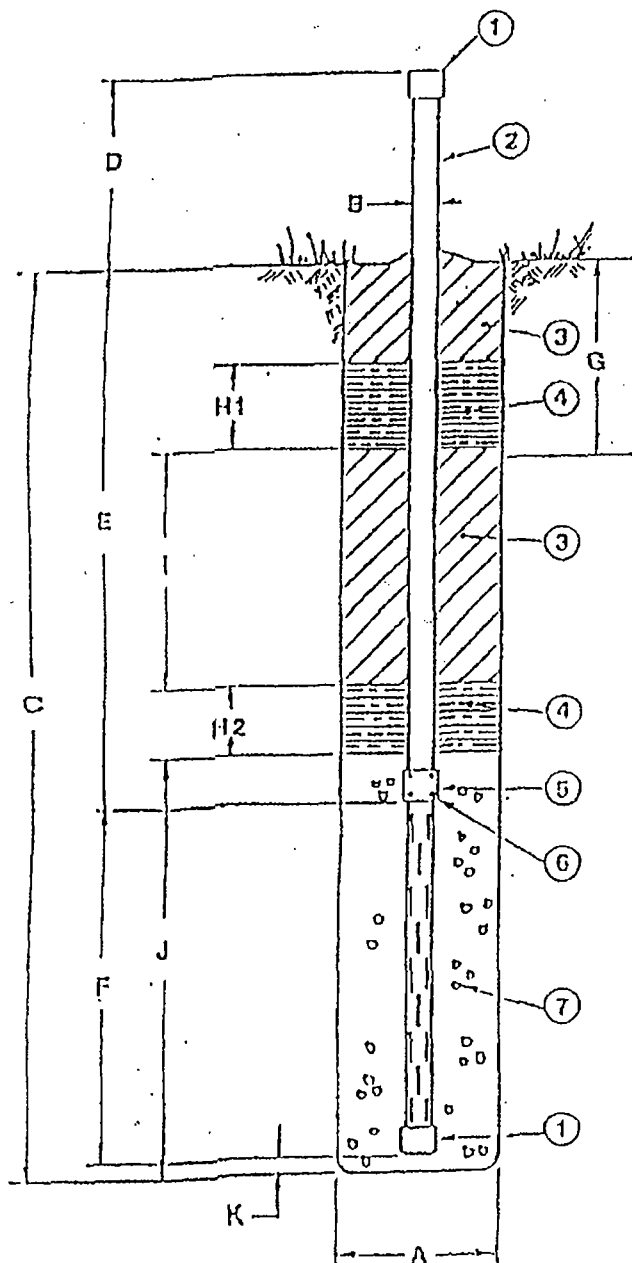
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>20 1/2</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>46.0</u> FT.
F SLOTTED PIPE LENGTH	<u>15.5</u> FT.
G COVER DEPTH	<u>11.5</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>11.0</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>No</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	<u>1</u> FT.
REFUSE DEPTH	<u>11 1/2</u> FT.
REFUSE TEMP. RANGE	____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION Mig Duwano

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GV-37

GROUND ELEVATION 825.60

MATERIAL LIST

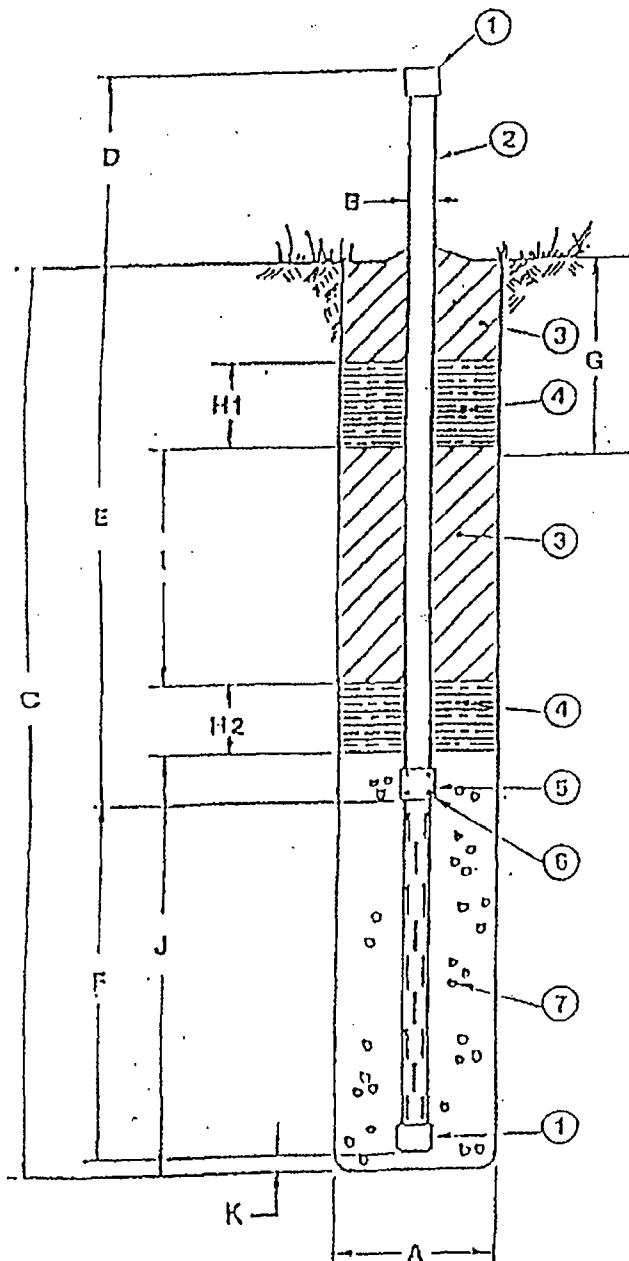
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>20 1/2</u> FT.
D SOLID PIPE ABOVE GROUND	<u>7.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>41.0</u> FT.
F SLOTTED PIPE LENGTH	<u>15.5</u> FT.
G COVER DEPTH	<u>11.5</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>11.0</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>No</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	<u>1</u> FT.
REFUSE DEPTH	<u>11 1/2</u> FT.
REFUSE TEMP. RANGE	____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Awareness

GAS WELL NO.: AV-37

DATE: 12-02-08

EL-825.60

[illegible]

GAS EXTRACTION WELL LOGS

JOB: Mig / Name

GAS WELL NO.: GV-37

DATE: 12-02-08

El. 825.60

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION M: g / P: w a n o

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GV-13

GROUND ELEVATION 819.50

MATERIAL LIST

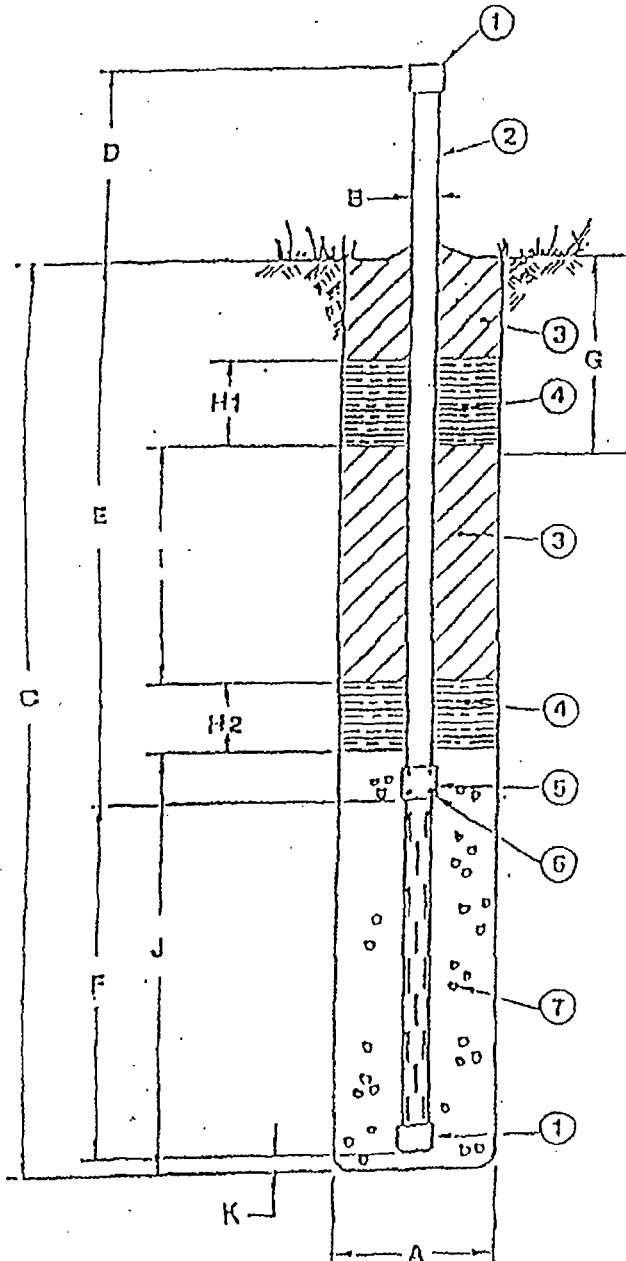
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>19</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>14</u> FT.
G COVER DEPTH	_____ FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>No</u> FT.
H3 3" PEA GRAVEL	YES <u>(NO)</u>
I SOIL BACKFILL	<u>No</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	_____ FT.
REFUSE DEPTH	<u>2</u> FT.
REFUSE TEMP. RANGE	_____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	_____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION M:q / Dewano

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GK-13

GROUND ELEVATION 819.50

MATERIAL LIST

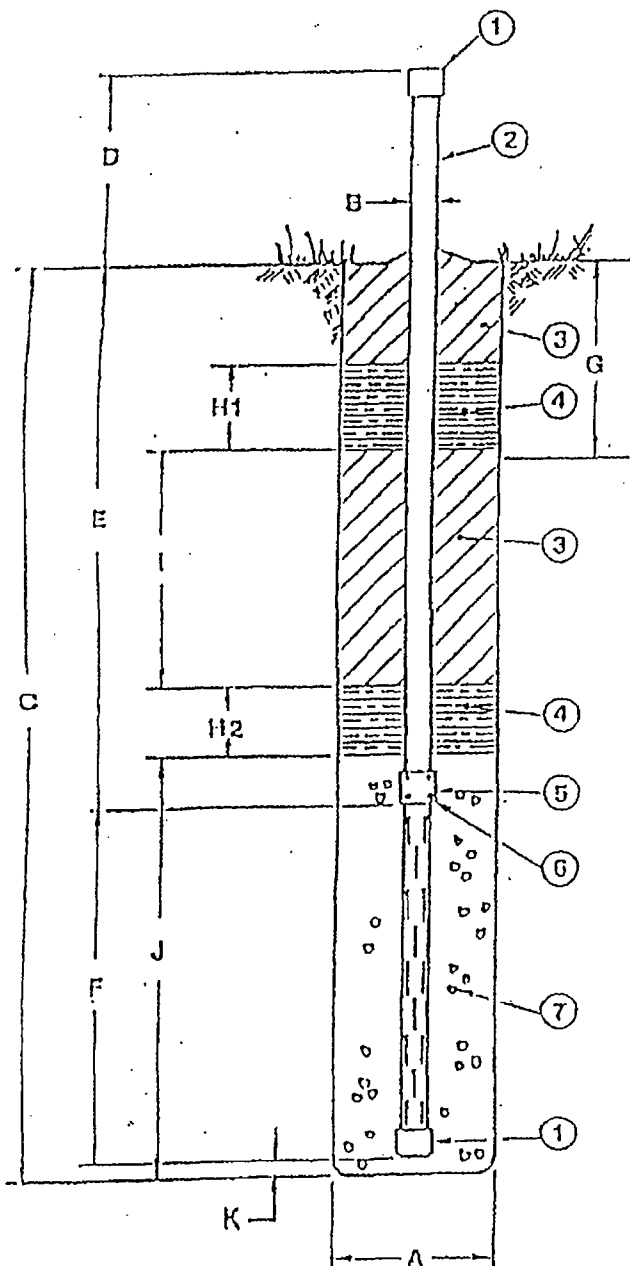
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>19</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>9.0</u> FT.
F SLOTTED PIPE LENGTH	<u>14</u> FT.
G COVER DEPTH	_____ FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>No</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>No</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	_____ FT.
REFUSE DEPTH	<u>2</u> FT.
REFUSE TEMP. RANGE	_____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	_____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



JOB: Mig / Newark

GAS WELL NO.: GA-13

EL-819,50

[illegible]

GAS EXTRACTION WELL LOGS

JOB: Mig / Newave

GAS WELL NO.: GA-13

DATE: 12-02-05 EL-819.50

[illegible]

GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION High / Newham
 WELL LOCATION _____
 GROUND ELEVATION 826.30

DRILLING DATE 12-02-08
 WELL NO. GV-12

MATERIAL LIST

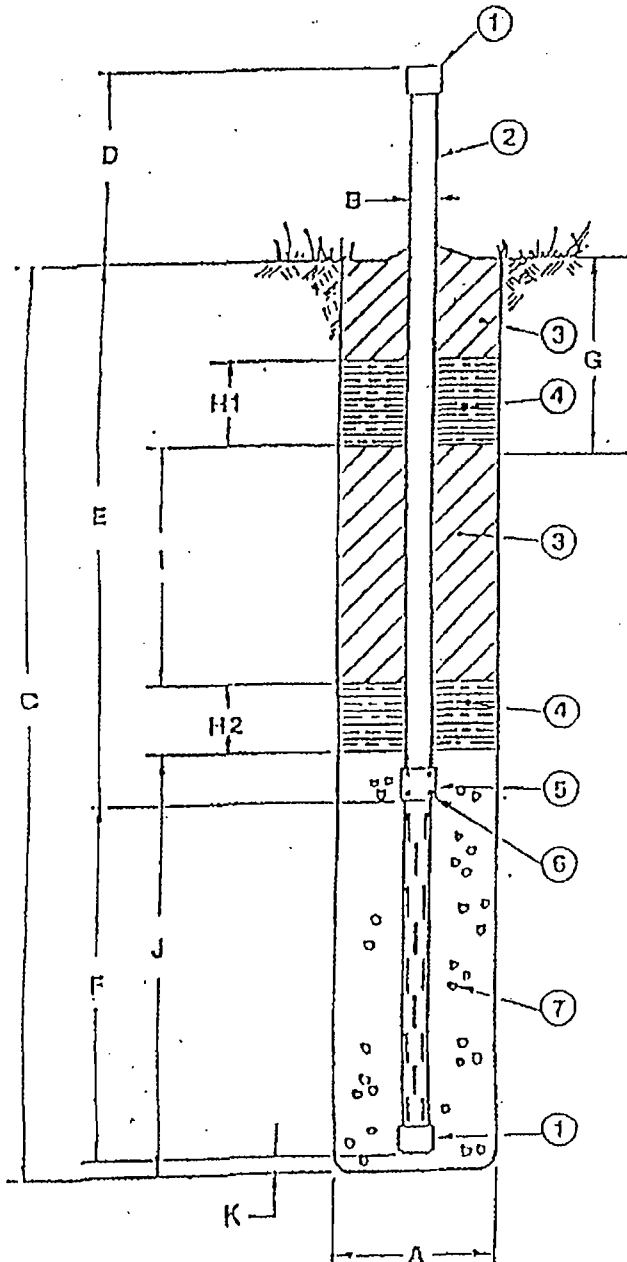
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>19</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>14</u> FT.
G COVER DEPTH	<u>16</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>14.0</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>14.0</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	_____ FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	_____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	_____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL DESIGN/AS-BUILT

SITE LOCATION High / Newane

DRILLING DATE 12-02-08

WELL LOCATION _____

WELL NO. GV-12

GROUND ELEVATION 826.30

MATERIAL LIST

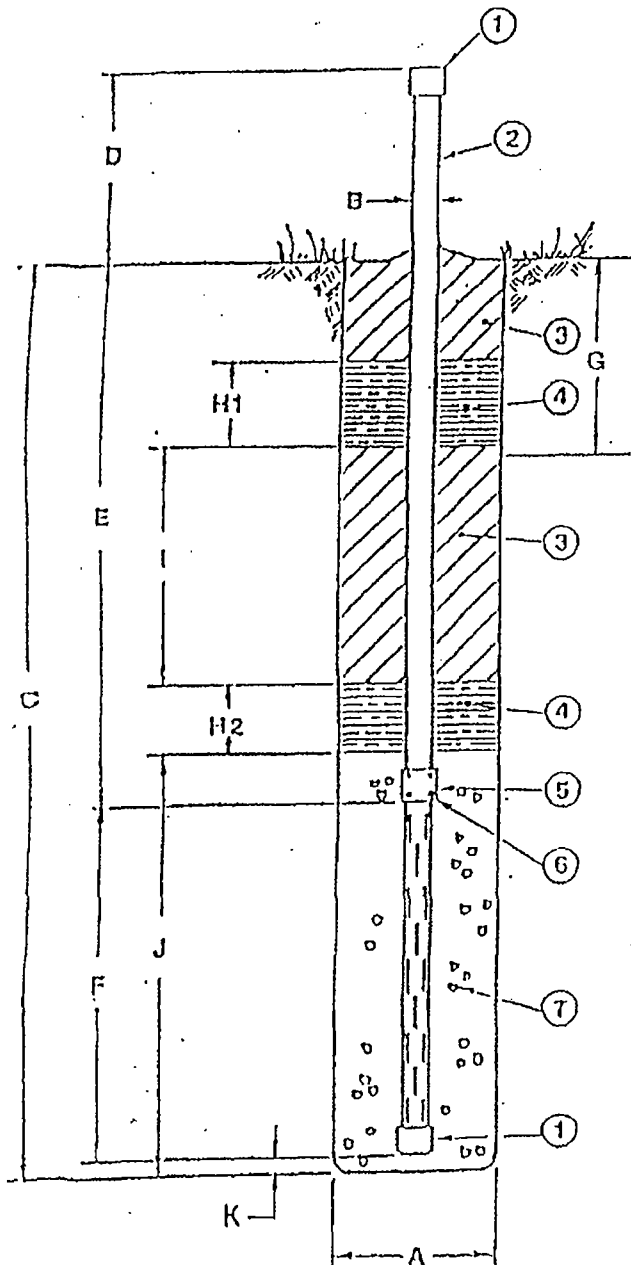
- 1 CAP
- 2 PIPE
- 3 SOIL BACKFILL
- 4 BENTONITE LAYER
- 5 COUPLING
- 6 LAG BOLTS
- 7 GRAVEL

SPECIFICATIONS

A BORE SIZE	<u>36</u> IN.
B PIPE SIZE	<u>6</u> IN.
C BORE DEPTH	<u>19</u> FT.
D SOLID PIPE ABOVE GROUND	<u>2.5</u> FT.
E SOLID PIPE BELOW GROUND	<u>4.0</u> FT.
F SLOTTED PIPE LENGTH	<u>14</u> FT.
G COVER DEPTH	<u>16</u> FT.
H1 BENTONITE LAYER	<u>3</u> FT.
H2 BENTONITE LAYER	<u>14.0</u> FT.
H3 3" PEA GRAVEL	YES <input checked="" type="checkbox"/> NO
I SOIL BACKFILL	<u>14.0</u> FT.
J GRAVEL PACK	<u>16</u> FT.
K GRAVEL BASE	_____ FT.
REFUSE DEPTH	<u>3</u> FT.
REFUSE TEMP. RANGE	_____ °F
* LIQUID LEVEL (FROM TOP OF PIPE TO LIQUID LEVEL)	_____ FT.

NOTES

* LIQUID LEVEL IS TAKEN PRIOR TO INSTALLING THE PVC CAP AND AFTER THE WELL IS COMPLETED



GAS EXTRACTION WELL LOGS

JOB: Mig / Hawaie

GAS WELL NO.: GV-12

DATE: 12-22-08

EL-826.30

[illegible]

GAS EXTRACTION WELL LOGS

JOB: M. J. / Neward

GAS WELL NO.: GV-12

DATE: 12-22-08

EL-826.30

[illegible]

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: MIG/ DENVER GARDEN JOB SUPERVISOR: Steve SmithDAY: Thursday DATE: 12-4-08 WEATHER: Sunny & Cold TEMPERATURE: 13°

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	DAVE KIMM	3003	6
		102	" "	5043	2
SOIL MOISTURE: DRY <u>MOIST</u> WET SATURATED				5156	1
SOIL TYPE: A B C OTHER:		629	Kate Klevan	4150	6
TRENCH WIDTH @ TOP	DEPTH OF TRENCH			5156	1
<u>20.5"</u>	<u>3.5'</u>				2
COMPACTION TEST <u>Dry Dist.</u> <u>Moisture</u> <u>Comp. #</u>					
<u>10" 120.5 13.1 96.4</u>					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL	<u>24" 121.5 12.8 97.2</u>				
EQUIPMENT	<u>3.6" 123.4 12.7 98.7</u>				
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Removed frost and snow from
slay pile then placed and compacted
clay in 10" lifts

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☒ HARDHATS
☒ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☒ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☒ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

TERRA ENGINEERING & CONSTRUCTION CORPORATION

01/94

DAILY REPORT

JOB NO. 880 JOB NAME: MIG - Sewerage Gas Wells JOB SUPERVISOR: Steve Smith

DAY: Friday DATE: 12-5-08 WEATHER: Clear TEMPERATURE: 10°

JOB CONDITIONS		DAILY TOTALS			
		EMP#	NAME	MACHINE #	HRS
CUT/SOIL		102	DAVE K...	3003	3
		102	" "	5043	6
SOIL MOISTURE: DRY MOIST WET SATURATED		629	Kurt Klevan	5156	3
SOIL TYPE: A B C OTHER:		629	" "	3003	5
TRENCH WIDTH @ TOP					
DEPTH OF TRENCH					
COMPACTION TEST					
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Removed snow and frost chunks from clay pile. Then placed and compacted final lifts of clay, then put topsoil back on Refuse Disposal area.

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
☐ HARDHATS
☐ SEAT BELTS
☐ LADDER
☐ TRENCH BOX
☐ GAS READINGS

% O₂ _____ % LEL _____
 H₂S ppm _____ organics ppm _____
 TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT: _____

01/94

01/7/94
DAILY REPORT Well: 08
JOB NAME: MEG/Dwaine LF Gas JOB SUPERVISOR: Paul Crante

DATE: 12-8-08

WEATHER: Snow Cover TEMPERATURE: 30°

JOB CONDITIONS		DAILY TOTALS			
CUT/SOIL		EMP#	NAME	MACHINE #	HRS
SOIL MOISTURE: DRY MOIST WET SATURATED		51	Krantz	9779	2
SOIL TYPE: A B C OTHER:		629	K. Kleven	4150	9.5
TRENCH WIDTH @ TOP	DEPTH OF TRENCH	720	B. Van Pinbrook	9779	10
COMPACTION TEST		802	J. Schultzy	-	9.5
DELAYS, SHORTAGES, PROBLEMS	Short Gasket				
MATERIAL	Wrap around Top of Well				
EQUIPMENT	Mobile T-190 Rental To Site				
LABOR	Slippery Slope Chain coming off on Trencher				
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

WORK ACCOMPLISHED BY SUBCONTRACTORS

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M. _____

TOOL BOX TALK

SUBJECT:

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Install Turbo Vent on Top of Well; Sample port in each Well
Finish 47 Well.

Feb 11 5:11 P.M.

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

DAILY REPORT

Garwell; 08

JOB NO. 880

JOB NAME: M/G/ Dewante L.F

JOB SUPERVISOR: Law Krantz

DAY: Fri

DATE: 12-12-08 WEATHER: cldy

TEMPERATURE: 10°

JOB CONDITIONS		DAILY TOTALS			
CUT/SOIL	EMP#	NAME	MACHINE #	HRS	
SOIL MOISTURE: DRY MOIST WET SATURATED	51	Krantz	9779	8	
SOIL TYPE: A B C OTHER:			Return		
TRENCH WIDTH @ TOP DEPTH OF TRENCH	802	Schultz	9779	4	
COMPACTION TEST	"	"	-	4	
DELAYS, SHORTAGES, PROBLEMS					
MATERIAL					
EQUIPMENT					
LABOR					
VERBAL INSTRUCTIONS					
INSPECTOR/ENGINEER					
OWNER					
GENERAL CONTRACTOR					
PROJECT MANAGER					

5h00

WORK ACCOMPLISHED BY SUBCONTRACTORS

GENERAL COMMENTS AND WORK ACCOMPLISHED BY TERRA

Fall sample for:

Clean up site

SAFETY ITEMS VARIFIED

- ☐ HAZCOM DATA SHEETS
- ☐ HARDHATS
- ☐ SEAT BELTS
- ☐ LADDER
- ☐ TRENCH BOX
- ☐ GAS READINGS

% O₂ _____ % LEL _____
H₂S ppm _____ organics ppm _____
TIME _____ A.M. _____ P.M.

TOOL BOX TALK

SUBJECT: _____

MAINTENANCE ITEMS VARIFIED

- ☐ EQUIP. WALK AROUND INSP.
☐ MAINTENANCE DECAL
☐ SERVICE NEEDS REPORTED
☐ VANDALISM PROTECTION

UPTIME TALK

SUBJECT:

APPENDIX E

Photo Logs

GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

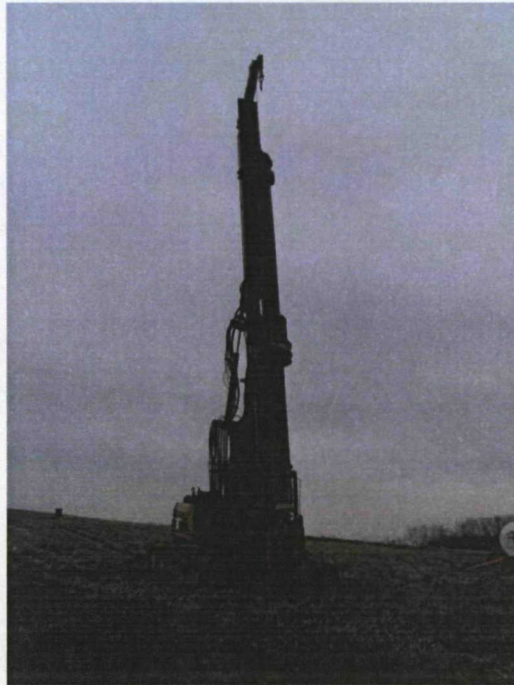
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Drill rig
to be used for
wells/vents.



Photograph 2

Comments: Extra
drill bits/buckets for
hard conditions (blue
arrow), liquids
bucket for wet
conditions (red
arrow), and a spare
bucket (yellow
arrow).



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: IDW trench, with waste from 11/11/08 covered with approximately 1 ft of daily cover. The trench was excavated for capacity for several days.



Photograph 2

Comments: Drilling of DP-12, adjacent to the IDW trench (red arrow). This was the first dual phase well drilled.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Culvert placement during road upgrade. The culvert is located west of the Site entrance to assist in draining water from north of the road.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

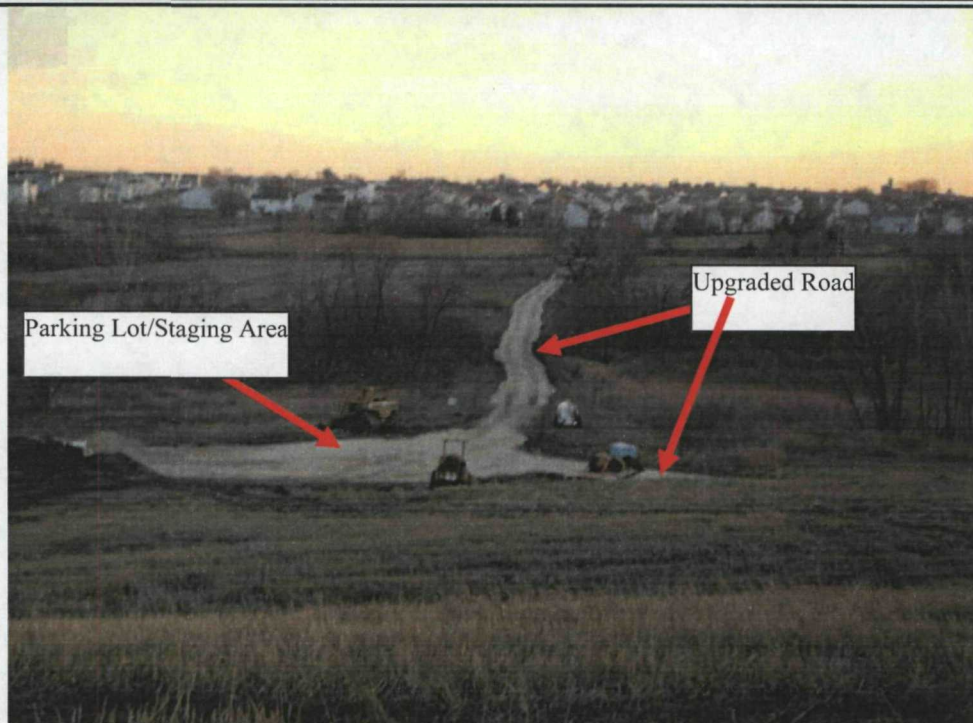
Photograph 1

Comments: IDW trench, with waste from 11/18/08 covered with approximately 1 ft of daily cover. The trench was excavated for capacity for several days and has been used for three days as of 11/18/08.



Photograph 2

Comments: Overview of upgraded road and newly constructed parking lot/staging area that was constructed on 11/18/08.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: The drill rig lifting the well casing for dual phase well DP-1.



Photograph 2

Comments: The well casing being lowered into dual phase well DP-1 borehole with the proper stick up height.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

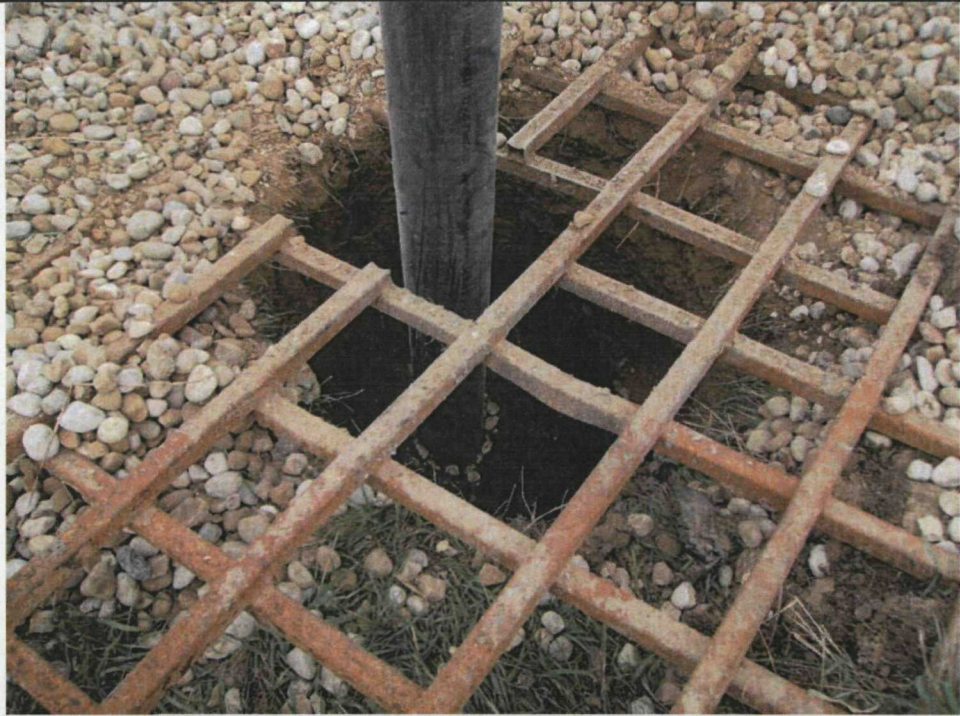
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: GV-23
vent with stone
covered to 3 ft bgs
and geocomposite
“donut” placed on-
top.



Photograph 2

Comments: GV-35
vent with 1 ft lift of
hydrated bentonite
Holeplug.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments:
Investigation derived waste (IDW) stockpile located east of DP-16. The waste was saturated and a berm (red arrow) was created down gradient of the stockpile location to contain the waste and leachate.



Photograph 2

Comments: GV-14 vent with silt fence installed down gradient of disturbed soils.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Silt fence was installed down gradient of vents GV-35 and GV36 on 11/24/2008.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

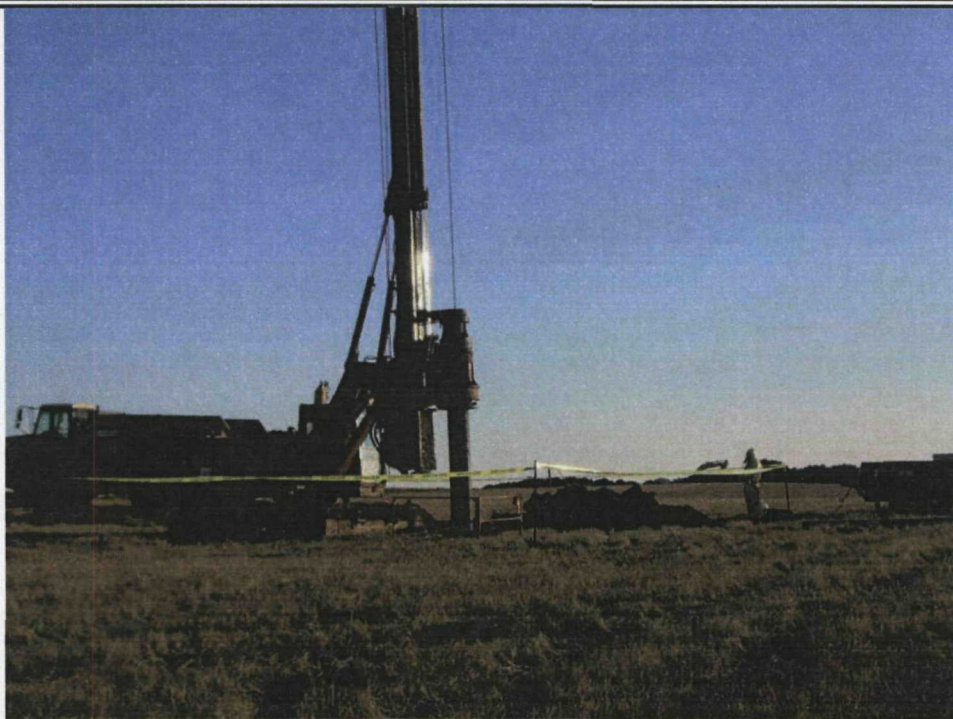
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Drilling of GV-11 on the southern portion of the landfill.



Photograph 2

Comments:
Trenching down gradient of GV-33 to install silt fence.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Silt fence (red arrow) installed at the downstream portion of the diversion berm (blue dashed line).



Photograph 2

Comments: The diversion berm (blue dashed line) constructed at the bottom of the road, adjacent to the parking lot/staging area.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments:
Decontamination
area adjacent to the
IDW trench (red
arrow).



Photograph 2

Comments: Power
washing of the main
drill bucket.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments:
Compacting the
third lift over a
portion of the IDW
trench with the
sheeps foot roller.



Photograph 2

Comments: A 55
gallon barrel, filled
with soil cuttings
from previous
borings, placed in
the IDW trench.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

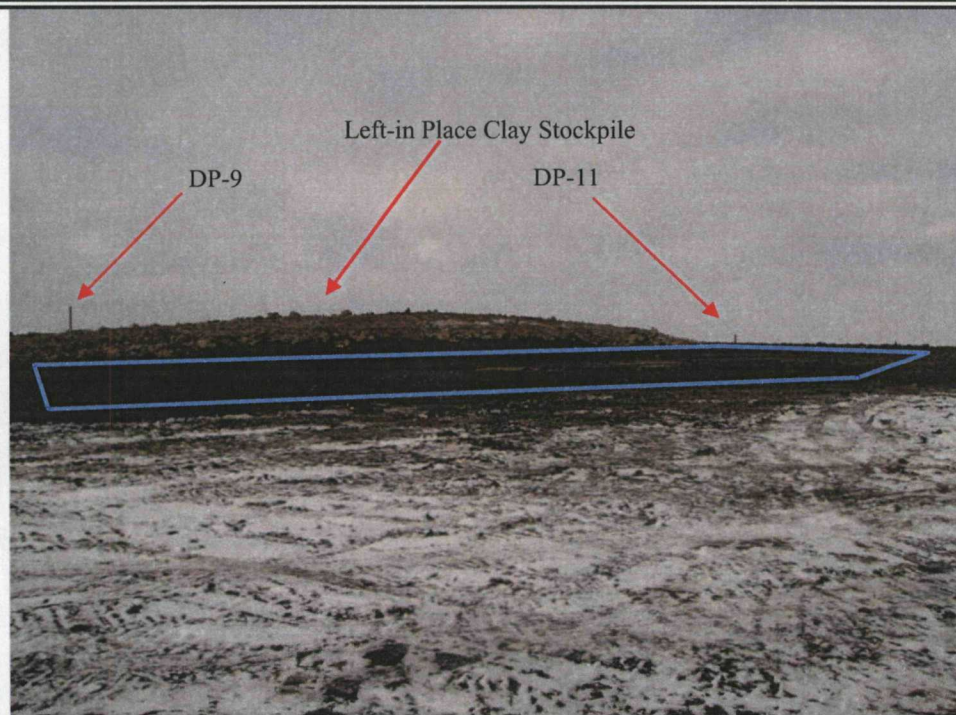
Photograph 1

Comments: Turbine installed on DP-14.



Photograph 2

Comments: IDW trench (blue outline) after construction of 30 inch clay cover and placement of 6 inches of top soil.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 3

Comments:
Pumping of the
decontamination
wash water into the
water wagon.



Photograph 4

Comments:
Dumping of the
decontamination
water from the
water wagon into
the contaminated
pond.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments:
Installation of silt
fence north of the
IDW trench soil
disturbance.



Photograph 2

Comments: Gas
sampling port
installed on GV-32.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments: Stone
base placed at GV-
33



Photograph 2

Comments:
Placement of stone
base at GV-02.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

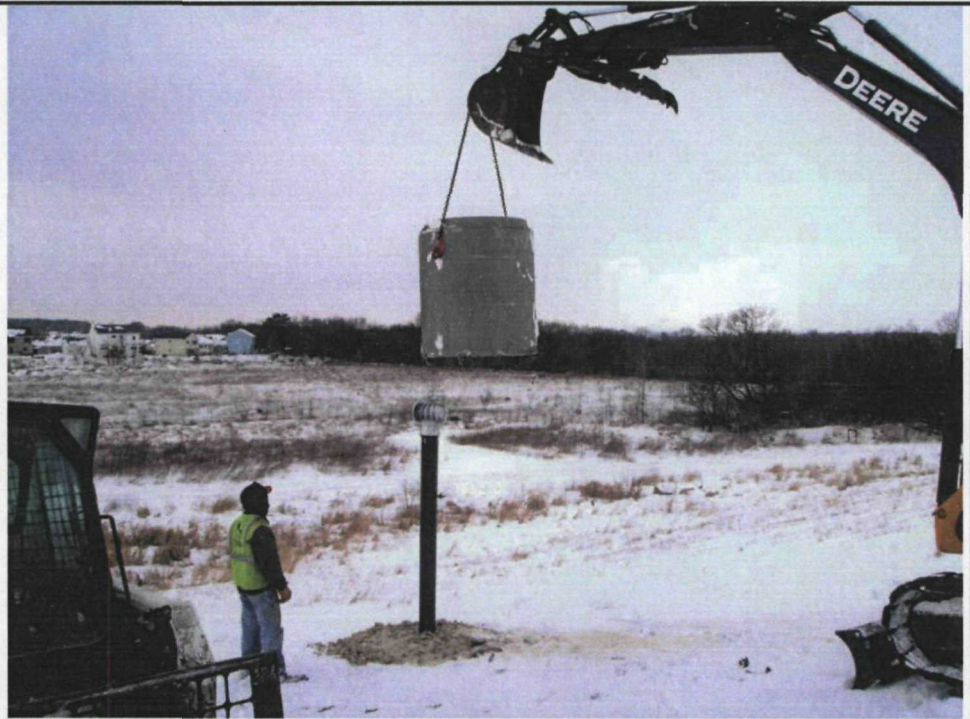
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 3

Comments: Raising
of concrete pipe to
be placed at GV-02



Photograph 4

Comments:
Lowering of
concrete pipe at
GV-02.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 5

Comments:
Placement of pipe at
GV-02 and leveling
of stone base.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

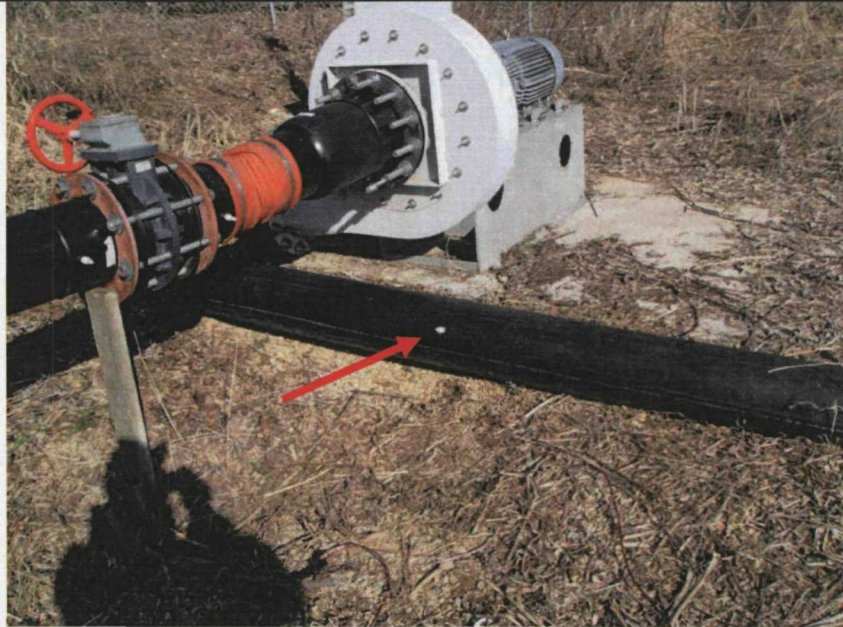
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

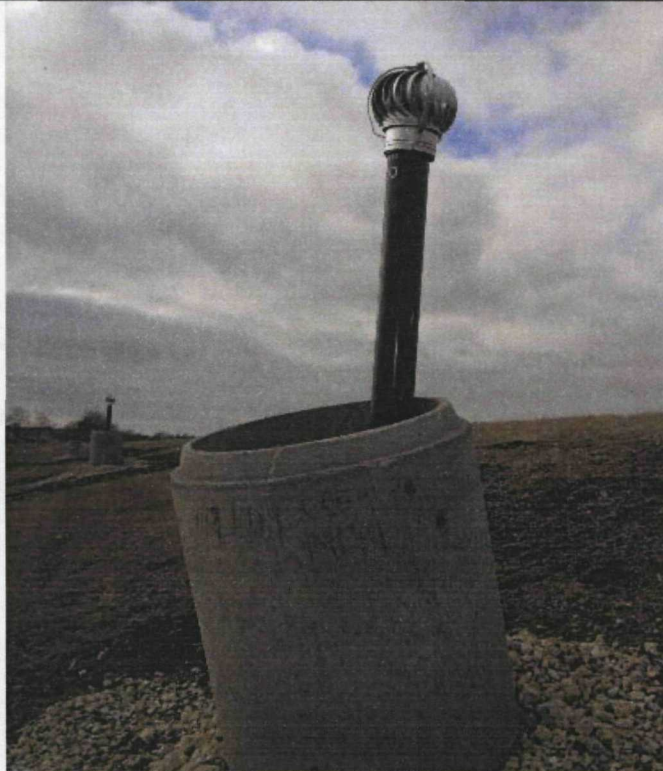
Photograph 1

Comments: New sample port (red arrow) down stream of blower



Photograph 2

Comments:
Concrete pipe around GV-10 before the concrete pipe was moved.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

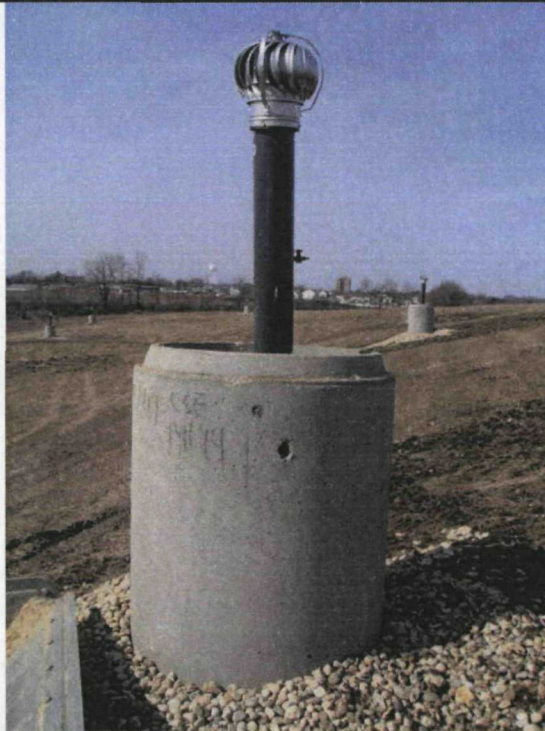
Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 3

Comments:
Concrete pipe
around GV-10 after
fixing pipe
placement.



Photograph 4

Comments: RC-2
before repair red
arrow shows vertical
which was cut to
even the sides.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 5

Comments: RC-2
after section of pipe
was removed and
butt welded together
(red arrow).



Photograph 6

Comments: RC-1
before repair.



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 7

Comments: RC-1
after section of top
was cut and butt
welded (red arrow)
and vertical section
was welded using a
4" electrofuse
coupling (blue
arrow).



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 1

Comments:
Pumping out the
condensate from
Northern knockout
pot.



Photograph 2

Comments:
Blowing straw
mulch with the
"Haybuster 2800."



GEOSYNTEC CONSULTANTS
Photographic Record

Client: BFINA

Project Number: CHE8214

Site Name: MIG/DeWane

Site Location: Belvidere, IL

Photograph 3

Comments: Hydro seeder was brought on-site to assist in mulching the site.



Photograph 4

Comments:
Application of hydroseed (seed, wood fiber and dye) to disturbed areas.

